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ABSTRACT

This document explores the problem of educational wastage in elementary and secondary schools of United Nations member countries. Educational wastage exists in the (1) failure of a system to provide universal education, (2) failure to recruit children into the system, (3) failure to hold children within the system, (4) failure of the system to set appropriate objectives, and (5) inefficiency in the achievement of objectives. The discussion cites the social, economic, political, and educational factors contributing to educational inefficiency. The report lists 28 specific recommendations for reducing educational wastage and proposes additional research and expanded international cooperation. (RA)

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A statistical study of wastage at school

Wastage in education
a world problem

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A study prepared for
the International Bureau of
Education

by M.A. Brimer
School of Education
University of Bristol
(United Kingdom)
and
L. Pauli
Département de pédagogie
Ecole de psychologie et des sciences
de l'éducation
Université de Genève
(Switzerland)

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Preface

When in 1969 the International Bureau of Education became an integral part of Unesco, the functions of the Bureau were re-assessed in terms of modern needs. The Council adopted a definition which stressed the problem-centred approach and suggested as a criterion for judgment that the work of the Bureau should lead to practical improvements in the educational process.

Accordingly, the established order of things has been somewhat re-arranged. During 1969 and 1970 the IBE undertook an international inquiry into the problem of reducing educational wastage. The results were embodied in a fairly brief working paper which was sent out before the International Conference on Education and which served as a basis for discussion at the Conference itself (Geneva, 1-10 July 1970). The Conference adopted a recommendation (No. 66) on the subject, the full text of which is reproduced as an appendix to this study. The formal report of the Conference was issued shortly afterwards.

The present book is intended to cover the full range of the international inquiry: the policies and problems, facts and research findings, discussions and conclusions, revealed by the process described above. The aim is to offer educators in Member States a synthesis of our current knowledge in this area, in order to help towards a better understanding of the educational process, to promote improvements or reforms, and to stimulate further research.

It was felt that the synthesis should be professional rather than administrative in tone and purpose and the Secretariat therefore entrusted the work to two consultants who had been associated with the inquiry from the outset: Professor L. Pauli, Director of the Education Department, School of Psychology and Education in Geneva University, and

Mr. M.A. Brimer, Head of the Research Unit, School of Education in the University of Bristol.

The two authors prepared their text in close consultation with each other and with the IBE staff; and each took specific responsibility for the version in his main working language. Consequently the views expressed are not necessarily those of Unesco.

While this book deals with all aspects of wastage in schools, the statistical treatment of the question has aroused considerable interest. The Secretariat has concluded that a second study would be justified, to handle methodological aspects in greater detail. This companion volume has been prepared by Unesco's Office of Statistics and is published under the title: *Statistical study of wastage in school.*

It remains for the International Bureau of Education to thank all the official agencies, institutions and individuals who have contributed to the survey, and in particular the two authors who have attempted the formidable task of translating the mass of information into a short book. The Bureau will, of course, welcome comments from readers—and hopes that through an international exchange of ideas may come an improvement in the schooling of the world's children.

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Chapter one

The nature of the problem

The term 'wastage' applied to education has an unfamiliar ring, and educationists may object to it as a depersonalizing of what is essentially an individual growth process. It comes from the language of economists and seems to liken education to industry, with capital invested in plant, and raw materials being processed into finished products. The more acceptable phrase would be 'failure in schools'. Yet, undeniably from the point of view of a nation's resources and expenditure, education is the world's largest business. What is being wasted? Human learning, school buildings and equipment, the labour of teachers. How do we know that wastage occurs? Through the failure of countries to achieve their educational objectives. In what ways are objectives not met? In children's failure to reach target achievement levels, in repetition of grades, in premature school leaving, in unemployable school leavers.

These are the short answers to questions about the nature of the problem, though the diversity of its forms among the Member States of Unesco inevitably complicates the presentation. Thus, while further education and higher education also require attention, this present work must restrict itself to schooling at primary and secondary level. Clarification of the precise nature of educational wastage at these levels as it will be dealt with in this volume, demands closer scrutiny.

Educational wastage can be said to exist in the following forms:

In the failure of a system to provide universal education.
In failure to recruit children into the system.
In failure to hold children within the system.
In failure of the system to set appropriate objectives.
In inefficiency in the achievement of objectives.

FAILURE TO PROVIDE UNIVERSAL EDUCATION

The Declaration of the Rights of the Child (1959) includes the child's right to education, and a country which fails to provide education for its total child population is failing in its duty. It is also wasting part of its human resources in leaving them undeveloped. This is not to say that all such countries are culpable. Many of them are economically incapable of making such a provision, but to the extent that they cannot or are not helped to do so, the world as a whole is poorer.

FAILURE TO RECRUIT CHILDREN INTO THE SYSTEM

The demand for education usually being greater than the supply, and the existence of legal prescription of the age at which children should begin school, together reduce the incidence of the second source of wastage at first and second level. Yet such forms of wastage still need to be considered above the age of compulsory education. It is one of the most important factors in further and higher education. Recruitment to voluntary sectors of an educational system depends upon ensuring that the pupils and their families identify the objectives and context of education as coinciding with their own aspirations.

FAILURE TO HOLD CHILDREN WITHIN THE SYSTEM

Similarly the holding power of the educational system in both its voluntary and its compulsory sectors depends on external and internal factors. Social and economic conditions may be such that the school cannot retain children as it would wish. Yet much can be done to adapt the system to external conditions so that total loss does not occur. The system has much greater responsibility for drop-out from school which occurs as the result of educational failure. Since it is within the capacity of a system to reduce both these sources of drop-out they are appropriately regarded as forms of wastage. Nevertheless in many countries the number of available school places at successive levels of education decreases, and it would be wrong to assume that all nations intend to hold all children initially recruited into the system throughout the total range of provision. However, it is reasonable to regard the national aim as being to retain all children recruited into a cycle until the objectives of that cycle have been satisfied. An estimate of wastage should include an index of drop-out which relates premature leaving to the number of children who are recruited at the beginning of each cycle.

FAILURE TO SET APPROPRIATE OBJECTIVES

Nations currently differ in their manner of setting objectives for the total education system and for its parts. In most cases, perhaps the strongest single influence in the determination of objectives arises from a traditional conception of what an educated person should be. The curriculum content and processes which have furthered this view of the educated man over many decades and even over centuries still continue to have a substantial influence upon the concept of what education should try to achieve.

An even more powerful influence in modern education has been the concept of the nature of childhood itself. Child psychology has emphasized the notion of education for children as they are and not merely as it is hoped they will become. With the development of economic planning and the recognition of the relationship between the output from education and the manpower needs of the economy, a third major influence has arisen in the determination of objectives of education which is exemplified by a statement made at the 1970 Conference: 'Within the development plan there is a relationship between investment and qualified labour in various parts of industry and we are now faced with the tragic situation of unemployment amongst those people who have been trained for specific purposes and the reason is that the relationship between education and qualified labour was worked out without true relationship to industrial developments; also the relationship with international trade has its repercussions, either direct or indirect on the final educational product.'

Failure to achieve a balance between the demands for the fitness of education to the individuality of developing children, the preparation of wise, balanced adults and the production of the trained manpower needed by the economy represents the ineffectiveness, although not the internal inefficiency, of an educational system. One of the problems is that the third of these sources of influence leads to more measurable symptoms of wastage than the other two. Yet, however desirable it might be to measure wastage as though it represented ineffectiveness, the concepts that would be necessary and the means to do so are currently lacking. So far as international comparisons are concerned, each nation must be responsible for setting its own objectives and for determining whether or not they have been achieved.

INEFFICIENCY IN THE ACHIEVEMENT OF OBJECTIVES

Inefficiency can only be recognized in terms of a lower output per unit of time than the system is designed to achieve, though such a statement

must be translated into educational terms if it is to have relevance: it then means the failure of children admitted to a part of the system to achieve the standards set for them. But systems differ in their mode of recognizing the achievement of objectives within established school practices. One way of institutionalizing objectives is to construct a series of threshold levels of achievement for each grade which must be satisfied before passing to the next grade. These threshold levels may be surpassed or achieved more rapidly but this does not lead to accelerated promotion, since the grade occupies a full school year and is uniform. The achievement of a grade level is judged by the school either on the work done throughout the year or by an examination at the end of the year. The level of the threshold in these systems is such that it is predictably achieved by less than the full enrolment. Failure to satisfy the grade threshold level leads either to repeating the grade or to dropping out of school if this is permitted. To repeat a grade may be regarded as wastage in that two year-grade places are being occupied where the system plans only one. One might ask the question: 'What has been wasted?'. Logically the answer ought to be that it is the *first year's* investment of resources and the pupil's investment of himself that has been wasted. Yet it is unlikely that *all* of the first year has been wasted. If the child merely repeats the grade, then some of the second year must also be wasted doing what has already been accomplished and is boring to the pupil. The loss in the second year arises not only from unnecessary duplication of educational resources and pupils' time, but also in reduction of pupils' motivation to learn for the future.

The existence of individual differences in rate and kind of learning leads some countries to adopt a different mode of setting objectives, of assessing achievement of them and of action consequent upon the assessment. The first major difference is that objectives are not regarded as uniform for all children of a given age and period in school. Objectives are set differentially to maximize the achievement of each child in terms of his previous achievement and present rate of learning. Thus, children of the same age are usually taught together, although they may be operating at different levels. While normative expectations of level of achievement are formed in relation to age and length of time in school, such expectations are not regarded as absolute thresholds of achievement governing the decisions as to what action shall be taken for the child in the next year. Assessment, decision and action tend to be continuous rather than occurring only at the end of the school year. Repetition scarcely exists in such systems, not because 'promotion is automatic', but because learning is regarded as continuous. Nevertheless, systems

such as this which are virtually devoid of repetition cannot avoid responsibility for planning the process by which goals are set both for levels of achievement and the numbers of children reaching them in a certain number of school years at a certain age. Perhaps because of concern for continuous learning, planning in these cases has been less evident and, in the absence of criteria of planned achievement, the means are lacking for evaluating the efficiency of the systems. It would be wrong, merely because failure to achieve planned goals was not easily recognizable, to suppose that wastage does not occur. Wastage does occur through excessive investment of resource, inadequate achievement and reduction of pupil motivation. An instance of the third of these aspects may be found in schools which attempt to cater for individual differences by creating teaching groups that are supposed to be homogeneous in level of achievement and rate of learning, but as a result reduce the motivation of lower groups and their expectation of level of achievement. Wastage in such systems can be measured, but as methods for achieving the measurement are not yet fully developed we cannot yet effect comparisons between schools of this type and those that operate by grade thresholds.

BRIEF ANALYSIS OF EDUCATIONAL SYSTEMS

These first remarks on the diversity of the ways in which educational wastage betrays itself point to the fact that one can only define, analyse and compare wastage in the context of the characteristics of the various educational systems. The most important differences depend upon the duration of compulsory schooling and upon the method of dividing up the period between the ages of five or six and eighteen or nineteen years into grades or courses. These two variables allow three types of system to be identified. There are of course many other differences but they are minor in comparison with the two that play their part in identifying the degree to which systems are prone to educational wastage.

In systems which we will call type A, compulsory schooling lasts for a period of between eight, nine or ten years. During this period education is continuous, comprehensive and not divided into stages by selective or other examination devices. Beyond this there is an optional senior or secondary cycle lasting from three to five years in which some schools specialize in preparing for universities, others for vocational or technical occupations, others for commercial or agricultural courses etc.

In systems of type B, compulsory schooling lasts for eight or nine years or perhaps more, and this period is divided up into a primary school

stage lasting from five to six years and a first cycle of secondary school lasting from three to four years or up to the end of compulsory schooling. The primary school curriculum is usually undifferentiated but at the end of this stage selection processes are used to allocate children to different sections with different curricula. Thus, at or about the age of eleven or twelve, children have begun to be oriented towards the kind of studies they will continue thereafter. Beyond the period of compulsory schooling there is an optional senior cycle of secondary education lasting from three to four years, which is organized in a manner similar to the second stage of type A.

In systems of type C, there is compulsory schooling for a period of from five to six years. Primary school occupies the whole of the period of compulsory education and beyond this an optional lower cycle of secondary school lasts from three to four years and is similar in organization to the corresponding stage of type B systems. Many developing countries have vocational schools at this level. Above this there is a senior cycle of secondary education lasting from three to four years and again its organization resembles that found in type B systems.

Particularly—but not solely—in the developing countries two different attitudes are recognizable with respect to compulsory schooling: in some, legal provisions on the subject exist but cannot be fully applied; in others, schooling is gradually being generalized but no law on compulsory attendance has yet been adopted. Most of such countries have educational systems of type C and there are also a few of type B. Other countries again employ a strict interpretation of compulsory schooling and are successful in applying it. These countries usually have optional education beyond this point which is providing for about 80 per cent of those who would otherwise be school leavers, for a further period of two or three years. Thus, even where no law or legal enforcement of school attendance exists, the holding power of the school may in fact be more effective than in cases where compulsory schooling is legally enacted.

A further way in which systems differ, regardless of their type, is in terms of the use made of examinations. Examinations may be employed to certify success at the completion of a stage and it is a common practice to use the results of the same examinations for admission to the subsequent stage. However, some systems require that a further examination be taken for admission to the next stage or a selected part of it. The arguments in favour of selective examinations for admission to stages rest partly on practical and partly on theoretical grounds. The pragmatic argument is that there is a limited number of places which ought to be given to those who are best suited for them; the theoretical

argument is that those who enter the subsequent stage should have achieved a standard beyond the minimum set for success in the previous stage. The former view is undeniable but the latter is open to question. Whatever the reasons given for the use of examinations it is undoubtedly true that they exercise a pronounced effect upon the increase in numbers of children who drop-out from school or are compelled to repeat the grade. Despite the absence of statistical data to represent the effect of examinations on wastage in the Member States of Unesco, the subject is of such importance that it will be treated more fully. But before we do so, the basic symptoms of wastage need to be understood in relation to the types of system which reveal them.

DROPPING OUT

A cursory analysis of educational systems makes it clear that in order to define the meaning of 'premature leaving', we are necessarily obliged to bring in the notion of educational 'stage'. There are also international reasons for doing so; without this notion, it would be impossible to establish comparable statistics between States with the same type of education system. As for comparing the statistics of countries with education systems of varying types, this will always remain dubious. For the reasons already given, a drop-out is here defined as a pupil who leaves school before the end of the final year of the educational stage in which he is enrolled.

It follows from this definition that leaving school after the completion of a compulsory cycle without going on to the succeeding cycle does not constitute drop-out. If, for example, in a particular education system it is decided that after the completion of a six-year cycle of primary or basic education, only 30 per cent of the normal age-group needs to proceed to junior secondary schooling, then the 70 per cent of pupils who at that point finally leave the school system and satisfactorily enter employment would not be said to have abandoned their studies prematurely. Similarly, if it is current national policy that children should remain at school to complete a nine-year cycle, but that subsequently only half of them should go on to secondary education, then the other half cannot be termed 'drop-outs'. In terms of the internal efficiency of their school system, they would be 'leavers' but not 'premature leavers'.

High drop-out in the first stage of type B or C systems is clearly very serious. Not only is it symptomatic of a defective operation of the system, but since the cycle itself is short, those who drop-out before

the end are not likely to have strengthened basic literacy and numeracy to the point where it becomes resistant to forgetting. It is now known that those who drop out in the early years of schooling are much more likely to relapse into illiteracy than those who complete the cycle. The same comment holds true for drop-out from equivalent grades in systems of type A. On the other hand, dropping out during the seventh or eighth year, although representing an educational loss in terms of the system's objectives, is unlikely to carry the same implications of being effectively a total educational loss. In general, when systems of type A are subject to the same degree of grade by grade drop-out as those of type B or C, they are likely to appear less efficient in the production of graduates at the first level. This suggests some of the caution that must be exercised in comparing systems of different types in terms of wastage attributable to drop-out.

At the second level of education, the notion of dropping out assumes an altogether more complex aspect. The fact of not finishing a given stage (between the ages of twelve and fifteen or fifteen and nineteen) continues to be a sign of operational deficiency, all the more striking because entry to it was on the basis of selection. Moreover, while common indices can be used to express the operational deficiency associated with drop-out, both the magnitude of the problem and the comparisons between countries on the basis of these indices are disturbed by the variety of characteristics of the system, especially the different school enrolment rates. If, to take a hypothetical example, in two separate countries with comparable education systems (B or C), the drop-out rate during the second or third stage is appreciably the same, but in the first case the school attendance rate is 80 per cent, whereas in the second case it only 25 per cent, the relative magnitude of wastage attributable to drop-out is not the same, although in each case a loss is sustained.

In countries with education systems of type B or C, there is often in fact a certain prestige value attached to the different sections or branches of the second stage, even if this is not recognized under the law. It is common for the education authorities and public opinion to agree that the classical type of secondary school is superior to the scientific type which, in turn is superior to a vocational or prevocational training school or again, to parallel classes in primary school. Hence, a pupil can drop out of one of the 'superior' schools for the purpose of entering one of the 'inferior' schools. Such a transfer can scarcely be regarded as a case of dropping out from the education system. It is one of the ways in which systems seek to introduce flexibility into the administrative classification of pupils into discrete types of school.

While such systems can claim that they have made provision for the adjustment of education to the pupil, transfer between schools must be regarded as a very crude form of educational guidance. Certainly, a high rate of such transfers would point to operational deficiency of the system.

Since drop-out as it is defined above is not related to the existence or duration of compulsory schooling, leaving school before the minimum age would not be regarded as dropping out. It follows also from the definition that those who leave before the end of a cycle, but who have satisfied the compulsory education laws by staying at school until they have reached the minimum age, would be regarded as drop-outs. Moreover, even in countries which do not have compulsory education, a child who left school before completion of the stage in which he had registered would be regarded as a drop-out. These implications of the definition that has been adopted must be noted since in some cases they conflict with more general notions of 'premature leaving'. Normally countries which have laws compelling school attendance interpret leaving before the minimum age as premature leaving. The term 'premature leaving' may also be applied in another sense by countries which provide for universal education beyond the minimum age of school leaving. Thus, in some countries where compulsory education may cease after nine or ten years of schooling, it is generally thought desirable that all children should complete the twelve years that are provided.

The idea that a certain length of schooling ought to be regarded as desirable for all children is impossible to apply universally. The period of human immaturity through which young people go before they enter the adult world varies with the complexity of their cultural environment. So long as there are differences among nations in this respect, it is unlikely that agreement will be reached upon minimum or optimum lengths of schooling for all young people. Moreover, it is not only a question of maturity. It depends also on how a nation perceives that children beyond a certain age might best receive their education. The existence of a variety of forms of further education, whether these be nationally or locally organized, permits education to be continued beyond the age for which schools provide. The linking of such education with responsible employment may legitimately be regarded as a more flexible and effective way of providing for the continuation of studies. There are those who deny this line of argument, maintaining that the provision of further education which overlaps with the period of attendance for which schools provide is an unnecessary duplication of resource; and leaves the continuation of studies to chance, since those who are most at risk at school are most

likely not to take advantage of the further education provision. However, as the concept of education throughout the whole of the life span begins to take hold and as the folly of isolating school systems from their social and economic context is recognized, so further education is seen to be an inevitable element of a system's provision and not as a salvage operation for premature school leavers.

REPETITION

The second major symptom of educational wastage to be considered in this work, repetition, also requires careful definition. By 'repetition' is meant a year spent by a pupil in the same grade and doing the same work as in the previous year. It is worth recalling the several assumptions concerning the nature of school learning which underlie the idea of repetition of grades and of the pedagogical practices following from these assumptions. It is assumed, first of all, that the study programme that is deemed appropriate for a particular cycle, for example the first level, can be divided up into sections, each of which will take a year to teach and a year to be learned by children who have already mastered the preceding section. The implication is that the sectional divisions are adapted to the children's capabilities and age groups. It is assumed, secondly, that the majority of children in a given grade will be intellectually capable of learning the required material at the minimal rate, as the teacher proceeds systematically through the syllabus of instruction. Thirdly, it assumes that a teacher or examiner can determine accurately the level of knowledge that the pupils must attain at the end of a given period to be capable of proceeding together to the work of the higher grade. Finally, it is assumed that those pupils who did not reach this required level can best be rehabilitated by repeating the unsatisfactory year's work in its entirety.

Certain general practices have followed from these assumptions. In the first place, teachers tend to plan their teaching in such a way that they can proceed steadily through the year's syllabus of instruction in each subject at a rate which will depend upon the content of the syllabus rather than upon the learning processes of their pupils, of which they are often ignorant. At whatever rate teachers teach, it will always be too slow for some pupils and too fast for others. In the next place, the pupils are examined at the end of the year, and are divided into two groups, those who pass and those who fail. The former will be promoted to the next grade; the latter may be allowed to remain in the same class for another year in an endeavour to raise their level of knowledge. The

examination procedure may be simple and expeditious or it may be more graduated, allowing a border-line group of pupils additional time and supplementary tests before the final decision on their fate is reached. In the end, however, the result will be the same; a two-fold division of the pupils into those who are promoted to the higher grade and those who must repeat, if they are to stay in school.

The diversity of promotion practices at the first and second levels of education among the nations of the world is such that, to represent them accurately, each country should be dealt with separately. It is undesirable to expose readers to the tedium of what would inevitably contain a good deal of repetition with relatively minor variations. For this reason the characteristics of promotion practices as they apply to the broad regions of the world are set down in Table 1.

Table 1
Promotion and repetition practices: regions and selected countries

Region or country	Automatic promotion from grades	Repetition in grades	Criteria for promotion	Who decides who repeats?	Number of years a pupil may stay in the same grade
Eastern Europe	—	*all*	*school marks (no more than two unsatisfactory marks)*	*teachers council*	*3*
Yugoslavia	—	—	(no more than three low marks)	—	3
Western Europe		*all*	*school marks, including exams*	*class teacher*	*2*
Austria & Federal Republic of Germany	1	2 & above	school marks, including exams	class teacher	2
Belgium	1 & 2	3 & above	school marks, including exams	class teacher	2
Denmark	1-7	—	—	—	—
Norway & Sweden	1-9	—	—	—	—
United Kingdom	all	—	—	—	—
North America	*all*	—	—	—	—

Region or country	Automatic promotion from grades	Repetition in grades	Criteria for promotion	Who decides who repeats?	Number of years a pupil may stay in the same grade
South America	—	*all*	*school marks, including exams*	—	*unlimited*
Brazil (some states)	all	—	—	—	—
Ecuador	1, 3 & 5	2, 4 & 6	—	—	—
Africa	—	*all*	*school exams*	*school*	*2 or 3*
Kenya & Nigeria	primary	secondary	school exams	school	2 or 3
Ethiopia	(% age restricted)	(% age restricted)	school exams	school	2 or 3
Asia	—	*all*	*school exams*	*school*	*1-3*
Republic of China	primary	secondary	school exams	school	1-3
Japan, Korea & Malaysia	primary & junior secondary	—	—	—	—
Bahrain, & Turkey	1-3	4 & above	school exams	school	1-3
Oceania	*all*	—	—	—	—

This synoptic table has been derived from data supplied in answer to a questionnaire which formed part of the survey conducted by the International Bureau of Education and which is described in detail in Chapter 6. For the sake of simplicity of presentation no difference is made between automatic and virtually automatic promotion since we are concerned with the fact of practice rather than the legal basis. The grades in which automatic promotion or systematic repetition takes place are identified. While the criteria for promotion are recorded according to the information supplied by Member States, there is no guarantee that in certain cases other criteria are also used. Likewise the last two columns—which record the person or group deciding on promotion and the number of years a pupil is permitted to stay in a single grade—rely upon the information supplied by Member States and in no way guarantee that all countries within the region behave in this way. In so far as exceptional circumstances are known and are critical they are reported separately under the region that subsumes them.

An even more general statement of the diversity of practices in promotion would characterize three main types. First, there are countries that throughout the first and second levels systematically operate repetition in all grades, using end of year examinations and other information on which to base a decision on promotion, a decision which is usually taken by the class teacher or by a teachers' council, and where the number of years a pupil is permitted to stay in a grade is limited. The second group of countries resemble those of the first group except that they do not specify who is responsible for deciding on promotion and do not control the number of years that a pupil is permitted to spend in a single grade. In the third group are the countries that promote without regard to examination performance and do not permit, except in rare circumstances, repetition of grades.

It is tempting to seek a developmental sequence among these promotion systems in which there is a gradual progression towards individualized instructional methods which neither allow repetition of grades as a meaningful guidance decision nor employ examinations as arbiters of individual educational progress. However, the situation is by no means as simple as this. Many advanced European countries employ systems which permit repetition and utilize examinations as part of the evidence towards a promotion decision. It might be suggested that those countries which do not permit repetition have still to demonstrate that they are capable of exercising educational planning to the degree that the internal efficiency of the system is matched by its ultimate effectiveness.

It is nevertheless clear that, where promotion is in large part dependent upon examination success, the examination procedures have a restrictive effect on transfer between grades. It is widely recognized that marks, whether they be obtained from teacher-made examinations or from standardized tests, are expressions of relative value. At their worst, they are expressions of inconsistent, subjective judgements by teachers on the basis of unreliable, written examinations of unknown validity. At their best, they express the performance of a child relative to the performances of other children of the same age and educational stage, within known limits of error and with reasonable predictive validity for the subsequent grade. At their worst, they are haphazard; and at their best they leave absolute judgements—as to what shall constitute a pass level—to be stated in terms of the proportion of children who shall be allowed to continue to the next grade. In neither case do they recognize the continuity of learning, which is not divisible into discrete and convenient administrative packages. Thus, examinations may also be accused of being irrelevant, not so much by their nature but in their conventional

use. Examinations are justified only if the information they supply allows one to make truly educational decisions about future action to benefit the individual pupil, of a nature so specific that without them such action could not be determined. If examinations are regarded as servants rather than as masters of educational decision-making they can be beneficial. Unfortunately, they take on their character as a result of decisions which follow them. Only when educational decisions are truly of benefit to the individual pupil will examinations exercise a positive influence in educational guidance.

While it might seem that much of the wastage throughout the world could be eliminated by one administrative stroke of the pen, through which repetition was abolished in favour of automatic promotion and drop-out was restricted by introducing compulsory education, it is apparent that these phenomena are themselves an expression of educational philosophy and of economic conditions as well as cultural practices. None of these can be modified easily, and in this chapter we have attempted to demonstrate why this is so and in what ways the countries of the world give expression to the phenomena which they agree in calling educational wastage.

Chapter two

A survey of the literature

The literature on educational wastage inevitably reflects national concerns and is closely related to the systems of education and the problems which they generate. This chapter will concern itself with the literature summarized in the *Bulletin of the International Bureau of Education* (1969, No. 173),[1] and will exclude reference to higher education and to techniques of measuring wastage. Following the pattern which has been adopted throughout this work, the literature will be reviewed in relation to the regions of origin. (See appendix 2.)

When the articles and books which are summarized in the *Bulletin* are sorted by region, the first thing that becomes apparent is that the volume of studies reflects the degree of concern with the problems and the degree to which facilities have enabled studies to be made. The largest volume of literature arises from Western Europe and the next largest from North America. The least comes from Africa, followed closely by Asia and South America. As will become apparent in the course of the next chapter, it is unfortunate that the areas of the world where wastage is most severe are those where the problem has been least studied.

AFRICA

In Africa, only one of the works referred to is indigenous in origin, the others being written by French or English nationals. This is produced by the Arab States Centre and is a bibliography on educational wastage in the Arab countries. Published in Beirut in 1969, it gives an up-to-date

1. Since the first issue of 1971 this periodical has been published under the title: *Educational Documentation and Information* (Bulletin of the International Bureau of Education).

and comprehensive bibliography, mainly in Arabic, on the forms, distribution and statistics of educational wastage as well as plans and forecasts. It is almost as much a Middle Easte n as an African document. Deblé (1964) discusses different methods of evaluating wastage in relation to data collected in the Ivory Coast and Mali. Apart from discussions of techniques of measuring wastage, she draws attention to the immense waste which follows the failure of many pupils to complete their courses or their delay in completing them. The same author in an undated publication subsequent to 1967 gives a very accurate and detailed analysis of the education system of 14 French-speaking African countries. Statistics are given to demonstrate the magnitude of drop-out and repetition in the period 1957-66, at the first level of education. Associated variables of time, sex and educational category are dealt with as well as the causes which may be a function of the educational system and its dynamics. Two short articles by Collins (1964) and Cameron (1965) complete the literature available in the *Bulletin* on African countries. These two articles, the second of which is a reply to the former, deal with the social and economic causes of wastage in schools and a technical institute in Tanganyika. It is apparent from consideration of the two articles that the data available are insufficient to enable useful conclusions to be drawn.

Thus this large populous continent with the highest wastage rates (by any method of accounting) in the world has received scant attention. There are many reasons why this should be so, among them being the almost universal pre-occupation with increasing access to school.

ASIA

Following the work by Brown (1966) in which he examined, on the basis of data supplied by Unesco, some of the problems of both repetition and drop-out in primary education in 21 countries, including 9 in Asia, a technical seminar on educational wastage and school drop-outs was organized by Unesco in Bangkok in 1966, and the final report was published by the Unesco Regional Office for Education in Asia (1967). In the same year a special issue of the Regional Office *Bulletin* concludes that, in countries which have high wastage ratios, repetition contributes more to wastage than does drop-out, and repetition is itself commonly followed by drop-out. It goes on to argue that the reduction of wastage cannot be brought about by a single method or a 'once and for all' action, but involves the whole educational system. Within the system, there are certain focal points for action; these being, the quality of

teaching, the quality of supervision, the instructional materials, the curriculum evaluation methods and school community relationships. Although the seriousness of the problem of repetition and drop-out is undeniable in the Asian region as a whole, the data on which this is concluded are often of an uncertain nature. A contrast to this is the information obtained by the Unesco planning team in Afghanistan and reported by Munier and his colleagues (1964). An annual questionnaire and a special survey covering all the schools in the capital city and a sample of provincial schools was used to identify cohorts entering the first grade in 1958-59, which were followed through the six-year primary-school cycle. Promotion, repetition and drop-out rates were calculated and an estimate of the efficiency of the school system was given as 70 per cent.

It would be wrong, however, to give the impression that the problems in Asia are uniformally concerned with wastage in terms of drop-out and repetition. Japan has largely overcome such problems of wastage and is more concerned with problems of absenteeism, although to many Asian countries such anxieties must seem trivial as compared with their own. A survey conducted by the Bureau of Research of the Japanese Ministry of Education (1958) showed that the percentage of absenteeism declined over the period 1952-58 from 1.43 to 0.70 per cent and that more than half the absenteeism was attributable to illness.

The causes of drop-out have also been of primary concern in the Asian region. Alvi (1965) studied drop-outs from girls' primary schools in the D.B. Khan district of Pakistan and found that for a cohort beginning in grade 1 in 1959-60 and finishing in grade 4, the percentage drop-out rate at the end of each of the four years was respectively 66.8, 33.0, 24.6 and 3.0. An examination of the causes by a check list completed by schools gave the greatest weight to poverty and included employment of children in agriculture; other causes were unfavourable attitudes to women's education, lack of religious education in schools, migration, unsatisfactory methods of teaching, hostility among the landlords, lack of means of communication and school failure. Similar conclusions were reached by a committee on non-school-going education in Ceylon (1960) in which the inquiry related to children between the ages of 5 and 14 during the 1950s. The main cause for drop-out and non-attendance was asserted to be poverty. Chowdhury (1965) studied a district of West Bengal and after reporting high drop-out and repetition, ascribes the inefficiency and ineffectiveness of the school system to economic factors and to parental indifference to education. A small number of government schools in Hong Kong were studied by Rowe (1966) and an intensive

examination was made of 150 children drawn from primary IV classes. The study was unusual in identifying and contrasting successful and failed pupils before drop-out, and in taking into consideration a large number of family as well as school variables. Although some of the findings were suggestive, there was little in the way of significant variation associated with the differences between the two groups which would help to pin-point the targets for remedial actions. The Bureau of Public Schools of the Philippines carried out a survey of elementary school drop-outs (undated) and referred to the period 1952-55. After reporting that 10 per cent of the children in the age-group did not enter school and that 75 per cent of enrolments in grade 1 left school before reaching the last grade of the elementary stage and showing a drop-out rate of 62 per cent for boys (almost twice as high as that for girls), it attributed drop-out to economic factors primarily but regarded school failure and home and social factors as having considerable importance.

Although it is frequently pointed out that drop-out and repetition are closely related there has been rather less study of the causes of repetition. The Department of Elementary and Adult Education in Thailand published a report in 1965 on the causes of pupils not sitting for primary school examinations and attempting particularly to identify the problem of grade repetition. The report comments that almost half of the repeaters were pupils who were absent from the final examinations and ascribed this to illness, low standard of academic achievement, lack of interest in studies, parental opposition. A much larger study in Thailand by the Bangkok Institute for Child Study (1966) covered 25,000 children in sampled schools. Through the use of achievement tests it revealed that the curricula for grades 1 and 4 prescribed standards of attainment which were not being realized in any of the subject areas. It also reported that the regional differences in children's achievement largely reflected economic and social variables. Children who were older or younger than the age level appropriate to particular grades achieved less highly than those whose age was appropriate. The achievement of children was positively correlated with the educational qualifications of teachers and with the size of school. The study specifically instanced the disadvantage suffered by children whose language at home differed from that which was the medium of instruction. It finally concluded that the repetition of grades appeared to hold no advantage in raising achievement levels.

Apart from broad and uncommitted recommendations there appears to be little study of the means of remedying the serious wastage situation in Asia. Too often the recommendations are very general and involve a

much larger expenditure of money than the countries have to spare. For example the National Seminar on Wastage and Stagnation in New Delhi (1968) criticized the archaic pattern of Indian education as being primarily designed in the past to train the élite, and recommended a vast programme to improve school output which would, among other things, familiarize teachers and education authorities with experimental education and suggested giving priority to the first two grades of compulsory education where failure was most intense. A more practically constructive approach is reported by Rice (1969) in describing 60 pilot centres set up to reintegrate children from 11 to 14 years of age into education and employment. The project was a joint one by the Government of India and various United Nations agencies and sought to deal with the particular problem of rural exodus, the difficulty of adaptation to the requirements of city schools, the shortage of premises, and the on-going work of young people. The article describes one of the centres, the school of Shahdera, which sought to bring children back to school in order to give them an education corresponding to their environment and their aptitude. Half of the day is spent in workshops while the other half is devoted to a general education. The services of a vocational guidance counsellor are available and there is constant contact within the community.

EASTERN EUROPE

Most of the literature from Eastern Europe which displays the degree of educational wastage in terms of drop-out and repetition is reported from Yugoslavia. Two studies reported in 1967, one by a government agency and the other by Capar, draw attention to the severity of the problem. The first is concerned principally with a projection of the development of education during the period 1966-70 and displays tables for the period 1960-64. The severity of the problem of repetition and the improving situation over the period is evidenced by the fact that the percentages of pupils completing the eight years of elementary schooling in the normal time over the four-year period were respectively, 40.2, 43.8, 45.7, 47.9. The second study claims that 38 per cent of pupils in one generation fail to complete their schooling in normal time and that the proportion of drop-outs was nearly the same for boys as for girls. The investigation also led to the conclusion that the pupil's abili[illegible] and his activities had an approximately equal influence on repetition but that economic and social conditions of the family, although having a general influence, had no special significance in many cases.

Sečujski (1968) studied the situation in the province of Vojvodina and concluded that about 30 per cent of an entire generation does not complete elementary school. He also found that the fundamental causes of pupil wastage were poor achievement and associated repetition. Unsatisfactory achievement was attributed to the inadequacy of the teaching process and the relationship between the school and the social environment. Mujović (1968) studied the situation in Montenegro and found that of the 14,261 pupils enrolled in the first grade of elementary school in the 1959-60 school year, 1,626 pupils (11.5 per cent) dropped out by the eighth grade. A large number of other pupils did not complete their elementary school in the normal time, having repeated one or two grades. He also found that wastage was much more frequent among girls. The reasons for drop-out were considered to be the long distances between the pupils' homes and the schools, the over-burdening of the syllabuses and curricula, the lack of qualified teaching staff and parents' misconceptions about the need for educating children, particularly girls.

From other countries in Eastern Europe there is less evidence that educational wastage is a serious problem. A study reported by Akolińska (1966) is concerned with wastage at the primary level of general education in the schools of Warsaw during the period 1959-64. Drop-out during the period of compulsory schooling was found to be lower in Warsaw than in the rest of the country (0.8 per cent in 1959-60 as compared with 1.3 per cent in the rest of the country). Drop-out was found to be higher among boys and repetition usually to precede drop-out. After the 1962-63 school year, however, both drop-out and repetition decreased as a direct consequence of a new enrolment procedure by which an inquiry into the child's living circumstances in his home is carried out prior to enrolment; factors in the family environment which might be detrimental to his studies are identified, and subsequent care is taken to counteract adverse influences. Likewise Budarnyj (1966) asserts that even in the schools of Moscow and Leningrad a large number of pupils repeat a grade. The principal concern of the work is with remedies and especially with the improvement of the quality of the teaching-learning process. A project is reported in which experimental classes were opened in four schools for pupils from several schools who had to repeat a grade. The number of study hours for certain subjects was increased and an attempt was made to teach the subjects for a subsequent grade while proceeding with the backlog of work from the repeated grade. By using marks differently so as to give greater incentive to pupils, considerable advances were made by the children in the experimental classes by the end of the year and even more so by the end of the following year. The study also

argued that a conditional transfer of a weak pupil to the next grade might be justified if help were given by the teacher and the other pupils to bring studies up to standard.

Two Polish authors analysed the causes of school failure from slightly different points of view. Kupisiewicz (1969) concerns himself with analysing the factors associated with the organization, content and methodology of education which may be responsible for school failure. He concluded that a large proportion of drop-out and repetition could be avoided if teachers had a better knowledge of the techniques of educational science and paid more attention to the pupils' personalities and to maintaining individual contacts with them. He emphasized that a problem-solving approach to learning has been one of the most effective pedagogical techniques, and timely diagnosis and application of remedial instruction, particularly through home assignments, has been likely to minimize failure in achievement. Konopnicki (1966) suggests ways of detecting pupils likely to fail and identifies two achievement factors as being related to subsequent school failure, one being insufficient knowledge in arithmetic and the other lack of skill in silent reading.

Kunickin (1966), Demencev and his collaborators (1966) and Więckowski (1968) all emphasize the improvement of teaching techniques as the best way of overcoming wastage. The use of a problem-solving approach, both individual and in group form, the testing and evaluation of the notions taught were instanced as ways of improving the quality of learning. Particular emphasis is placed upon the collective effort of a group of pupils in problem-solving and upon the need for teachers to work with parents as well as with children.

WESTERN EUROPE

The majority of studies of educational wastage in Western Europe, like those in Eastern Europe, are less concerned with identifying and quantifying wastage than with determining the causes and finding remedies. That the level of wastage in Western Europe is still of concern is illustrated by three articles. Belser conducted a series of inquiries in primary schools in Hamburg and found that of 1,624 pupils who left the second stage during the years 1963-66, approximately 16 per cent had not completed their studies as a result of repetition. Even among those who completed primary schooling, 24.9 per cent repeated at least one grade. Repetition has also been regarded as a major problem in France. Blot (1966) in study restricted to the five grades of primary education reports a high proportion of repeaters: from 15 to 20 per cent of an enrolment of 4.9

million pupils repeated at least one grade. A more localized study by Girard (1969) concerned itself with a sample of approximately 70,500 pupils during and after the five years following completion of the elementary stage. The conclusion of the study was that unless secondary studies were modified a wider access to secondary education would be followed by an increase in retardation and an over-all increase of age in the school population. It also found that retardation is rarely overcome and tends rather to accumulate.

The topic which has attracted by far the largest number of studies in Western Europe over the decade is the relationship between social class and educational opportunity. While not directly concerned with wastage as such, it draws attention to a broad social trend which at one extreme is concerned with school failure. The greater risk of school failure of those children who come from lower social classes must therefore be regarded as pointing the way to causes of failure. De Coster (1962), Erlinghagen (1965), Clerc (1964), Jackson (1966), Peisert (1967), Christoph (1968), Ingenkamp (1968), Beer (1968), Reuchlin (1969) and Seidl (1969) all evidence the fact that social class and educational opportunity are linked. As well as merely identifying the fact of a relationship between socio-economic status and educational opportunity through the difference between the proportions of the various social groups receiving privileged education, certain concepts are introduced which enable the administrative and geographical areas of socially-linked educational deprivation to be located. Peisert refers to areas of 'lesser cultural density', i.e., those areas in which the proportion of the 16-19-year-old population attending schools is 3.4 per cent as against 14.8 per cent for the Federal German Republic as a whole. Eggleston (1967) similarly draws attention to the context of the school as representing an important influence. In other words it is not merely the socio-economic status of pupils in the school that is associated with educational disadvantage but also such influences as the dominant social class of the area from which the school draws its pupils, the character of the peer group within the school and the social character of the school itself.

Neither the evidence of social disadvantage nor its location are more than steps on the way to the identification of causes which lead directly to the failure to achieve. Peisert (1967), the Council for Educational Advance (1966), Jackson (1966), and Girard (1963) refer to the attitudes of parents towards school and the degree of interest of parents in education as being fundamental to the motivation of children to learn and achieve in school and to their resistance to premature school leaving. Roeder, reporting on conditions in the Federal Republic of Germany, and

following the extensive work of Bernstein in England, reports that the lower one descends the social ladder the more marked is the way in which different language barriers are manifested.

Psychological factors which have importance irrespective of socio-economic status are frequently reported to be associated with school failure. Bassi (1965), Kaiser (1966), Kirchoff (1965), Stienlet (1964), Geller (1965), and Gutierrez (1964) draw attention to the relationship between emotional instability and school failure. The child's sense of security associated with the degree of stability of its home and early experiences of success and failure and various forms of physical and mental handicap are found to be frequently associated with low achievement, behaviour problems in school, and with drop-out and repetition.

Multiple causes arising from all sources are frequently asserted to be at the root of school failure. Thus Avanzini asserts a long list of individual home and school factors which influence achievement. Such assertions of multiple causality do not lend themselves to identification of the way in which factors interact to produce their effects unless they are studied together. Few studies have attempted this and most, like Douglas (1964) and Roller (1963), are the results of surveys in which the data are statistically manipulated to test for interaction rather than experimental studies. Nevertheless, longitudinal studies like that of Douglas are most valuable in displaying the chain of circumstances which over time are related to failure in achievement. Reports of tested remedies are less numerous than hortatory criticisms. Guidance is frequently mentioned as being one of the answers to individual failure. Le Gall (1967) advocates the use of guidance as a means of securing the better adaptation of children to schools. But guidance can also mean the introduction of advisory services in communities where educational disadvantage is known to occur. Aurin (1968) reports that a greater increase in the proportion of children staying on at school occurred in those areas of lesser cultural density where guidance centres were introduced than for the *Land* as a whole.

Reform of teaching methods and processes is also urged. Bastin (1966) argues the need to adapt the school to children and explains that traditional education is too bookish, that there are too many class hours and not enough physical exercise. Landmann (1967) puts forward a four-point programme for the revision of teaching inspired by the principles of Pestalozzi. Lobrot (1966) refers to the teaching institution as producing a bureaucratic system in which the teacher and the pupil are enclosed in a tight net of formal obligations which inhibit education. He argues that the relationship of authority should be abolished and

that self-government should be instituted in the classroom, the teacher's attitude should be that of a counsellor. Zweifel (1967) suggests that programmed instruction and teaching machines might, despite their limitations, serve the needs of secondary education and goes on to suggest that while school failure is real and serious, it is the social inequality in educational opportunity which is of paramount interest. There is of course a vast literature on the causes and remedies of such social inequality beyond the limits of the issue of the *Bulletin* under review.

NORTH AMERICA

The North American books and articles covered by the *Bulletin* exclude most of the vast body of literature on socially-linked disadvantage and are mostly concerned with the specific problem of drop-out. As compared with the other regions that we have examined, studies devoted to remedial programmes are more in evidence. Since little repetition occurs in North America and since the fields of educational guidance and counselling is a large one, this area too has been left out of the *Bulletin* coverage.

There is no shortage, however, of large-scale studies on drop-out in the United States of America. Dentler (1968) began a study in 1963 which aimed to determine the relative drop-out rates in various cities and whether relative differences in these rates were associated with selected features of the local economy and social structure; it also includes a comparative analysis of the effectiveness of programmes designed to prevent wastage. He concluded that the differences in levels of high-school withdrawal and adult functional illiteracy in large cities are largely attributable to differences in population composition, size and stability of occupational structure, personal income and employment conditions. He found that cities with above-average wastage and illiteracy rates were those with above-average expenditure on education, health and public welfare but no association was found between the character of educational or welfare programmes and levels of school withdrawal and adult illiteracy. He made the rather startling suggestion that increase in economic growth for urban communities and more diversified social insurance for individuals and households was essential to remove educational barriers to economic security and that school and welfare programmes attempting to deal directly with drop-out prevention or illiteracy 'are irrelevant if not futile'.

Schreiber (1964) reports a project carried out by the National Educational Association aimed at examining the holding-power rates of school systems in 128 large cities with populations over 90,000. It con-

cerned itself with classes in the period 1960-63. The findings demonstrate that the situation at the grade 10 level improved over the period but that the rate of wastage was related to the size of the city. Voss (1966) points out that in the USA drop-outs do not form a homogeneous group and that it is important to distinguish between early and late school drop-outs. He suggests that pupils with limited ability generally leave school early whereas 'capable' drop-outs tend to remain in school longer. He identified three categories of drop-out: involuntary drop-outs (those who leave school as a consequence of a personal crisis); retarded drop-outs (those who lack sufficient ability to handle academic studies and who tend to drop-out prior to high school entrance); capable drop-outs (those who terminate their education prior to high school graduation, despite the fact that they have the ability to do the required academic work). After analysing the literature on well-designed and statistically evaluated drop-out programmes, Russell (1968) identifies three other categories of drop-out: young people who present difficulties in the school setting but will fit adequately into the world of work; individuals who have trouble adjusting to both school and society; pupils who may require special treatment within the school and sometimes help from outside the school. Russell goes on to point out that these characteristics seem to be common among young people from low socio-economic groups though they are not peculiar to these groups.

A refreshingly different view of the outcome of drop-out is presented by Vincent (1966). A small number of grade 11 male drop-outs from three public high schools in Calgary, Canada, were followed up over a period from three to six years after they had dropped out. The sample studied did not fit into the general stereotype of failure and burden to society attached to drop-outs. Indeed, a large number of the drop-outs were highly successful in job level and stability and in earning power. Many had sought further education to enhance their employment status and showed every sign of being a benefit to society. The article pleads for a more flexible consideration of the drop-out problem and the degree to which some drop-outs may in fact benefit themselves and society by securing their adjustment in the world of work.

Following his survey of drop-outs, Schreiber (1968) analyses the causes of drop-out. He stresses the multiplicity of factors, largely extrinsic to the school and reflecting the current state of the society, in which there is a high rate of youth unemployment, continuous rise in delinquency, large-scale migration to urban centres, and a population explosion. He expresses the view that schools must alleviate the early conditions associated with the development of attitudes and behaviour which lead

to dropping-out and they must also offer the motivation and the opportunity for greater success in school. Lichter (1968) studied intellectually capable, but potential drop-out, boys and girls in Chicago public high schools between 1954 and 1958. After a survey of the psychological difficulties of adolescence and a series of case illustrations, profiles of the drop-outs and of their parents are given. Elliott (1966) also sought to identify some of the important factors which explain why intellectually capable students drop-out from high schools. The article emphasizes causes not directly connected with the school situation and points to the significance of the social class or minority group to which a student belongs. It points out that adolescents from certain classes tend to behave in conformity with the standards of their environment. The pupils' personalities and the attitude of families to education interact in such a way as to encourage drop-out. Raph (1966) and Bricklin (1967) also draw attention to the problems of bright failures.

The very large literature on social disadvantage and educational opportunity is covered in the *Bulletin* by a number of reviews. Witty (1967), editing the first part of the 1966 Yearbook of the National Society for the Study of Education in the United States, surveys the literature on the problems of educationally retarded pupils and culturally and socially disadvantaged pupils. Passow (1967) edits a book of readings on the education of disadvantaged children coming from the economically or culturally developed social strata in the USA. The volume presents a collection of the principal articles which emphasize the action and efficiency of solutions to the problem. Rees (1968), after examining the meaning and conditions of disadvantage for children and the implications of compensatory programmes, reviews the programmes and projects which have been carried out in the USA. Cervantes (1965) studies the social and economic factors contributing to early school leaving in urban areas where drop-outs are of similar socio-economic background. He looks at the friendship patterns and the school experiences of different pupils and describes his techniques and instruments. Jensen (1967) raises an explosive issue when he refers to intelligence as being mainly transmitted genetically; however, he does point to the environmental disadvantage which is associated with low educational opportunity. He identifies the most important of the deficiencies as being in language, which he claims hardly ever retains its status as an instrument of thought but remains at the level of a primitive system of communication and social intercourse.

There has certainly been no shortage in the USA of work on programmes to remedy drop-out. Schreiber (1964) discusses the processes

of guidance for potential drop-outs. Some programmes, such as that described by Kruger (1969), are aimed at preventing drop-out. Referring to an alienation-disability syndrome, Kruger states that the five million dollars authorized by Congress to enable schools to organize model projects is being used to improve teacher-pupil relationships by giving pupils a larger share of responsibility in the organization of work, to create a new conception of school premises, to revise the curriculum content to deal with topics that are more relevant and concrete to daily life, to adopt an instructional methodology based on pupil reward for success and to provide a variety of pupil services and more active family participation. Two schools which aim at recovering the potential drop-out are described in the *Carnegie Quarterly* (1968). These privately financed schools accept students from 16 to 21 years of age and are characterized by an extremely flexible structure. Students are allowed to move at their own pace in the subjects which they need to complete training. The school offers three certificates enabling students to enter different professions and to attend college. Other programmes are aimed at enabling students who have dropped out from school to find a more compatible further education. Such a school is described by Herzog (1966) when he refers to a 'poverty prep school' in New York. The school offers opportunities for learning a trade as well as a means of improving basic education. Vocational guidance is offered, but above all the school aims at developing self-respect. Herzog claims that the results from the school are positive and that almost all of the pupils complete their vocational training leading to a diploma which will enable them to find employment and to live in harmony with society.

In contrast to the optimism of the article in the *Education Digest* (1966) which refers to 10 proven programmes to prevent drop-outs, an article by Scales (1969) claims that his study reveals that there is practically no relation between prevention of drop-out and school curricula designed for the purpose. Even schools with work education programmes especially suited to the supposed needs of potential drop-outs do not have significant results. He does note, however, that the number of drop-outs diminishes if the pupil is associated with adults who concern themselves with him and make him feel respected and worth while. Kaufman (1968) also warns of the high cost of special programmes to prevent drop-out. He points out that the training of teachers is sometimes insufficient and incomplete and that the criteria for the selection of potential drop-outs is often erroneous.

LATIN AMERICA

The majority of the literature from Latin America describes, and seeks to quantify, the problems of educational wastage. Naturally the larger countries are better documented than smaller countries. For Argentina a very substantial set of statistics over the decade are available. Thus Arévalo (1963) presents the data on drop-out and school output in Argentina taken from the reports of the National Council of Education. Statistical tables of enrolment, non-enrolment, non-attendance and drop-out up to grade 6 are provided, i.e., within the legal limit of compulsory education from 6 to 13 years. The *Consejo federal de inversiones* (1964) reports a survey of the drop-out problem and supplements the statistical data with a large number of hypotheses relating to the causes of drop-out including the deficiencies of the educational system and factors relating to the pupils' socio-economic background. The Organization for Economic Co-operation and Development (1967) in a survey of educational and human resources and development in Argentina emphasizes the methodological aspects of educational and man-power analysis and planning. It deals with the internal efficiency of the educational system and particularly with the serious problem of drop-outs and repeaters. The data is analysed by level and type of education and reaches the conclusion that although the enrolment ratio of the 6-12 age-group is high, only about 50 per cent of those who start primary education actually complete it and even then not without repeating one class on the average. It states that because of the high rate of drop-out and repetition it takes about twelve pupil-years instead of seven to produce one primary school leaver. Although the situation in secondary schools is better, the wastage rate in technical and higher education is considerable.

The Secretary of State for Culture and Education (1969) draws attention to the low output from the educational system in Argentina and suggests that a cause might be the inadequate structure of the educational system. A reorganization is proposed involving the curricula, the articulation of stages, compulsory schooling, and promotion. It also proposes to tackle the underlying social, cultural and psychological bases of wastage. Apart from such evidence of planning to reduce wastage there is little sign of specific remedies being applied.

A report by the *Instituto nacional de estudos pedagógicos* (1964) and a very substantial document in two volumes by the Ministry of Planning (1969) presents the situation in Brazil. The first, as well as illustrating the close ties between education and the economy by means of statistical tables and presenting the variables relating to the economic and social

institutions and to education institutions, presents an analysis of data taking into account under-enrolment and over-enrolment, and failure and drop-out at the end of the school year. The second begins by examining the expansion and reform of education and then seeks to set strategic goals and to estimate needs for 1970 in intermediate and higher education.

The national problem of educational wastage in Chile is particularly studied by Hamuy Berr (1961), who pin-points drop-out as the most important of the wastage problems in that it results in the largest number of illiterates or of practically uneducated individuals. The author also refers to a follow-up study of a group of pupils over several years and notes the regularities of school attendance, promotion, repetition and temporary or ultimate drop-outs. The most important factors associated with drop-out were those relating to place of residence, age of entrance to school, economic background and geographic situation of the school.

Ortiz de Salcedo analyses quantitatively the problem of drop-out in Paraguay. She reports a high percentage of repeaters and drop-outs; only 10 per cent of pupils who entered first grade in 1949 completed primary schooling. The author also studies the causes of wastage in an investigation covering approximately 490 primary schools. The Ministry of Public Education in Peru (1967) provides a volume in two sections the first of which deals with the structure of the education system and the second gives statistics among which are those relating to attendance and drop-out. There is also a report of a special study of school children of the primary and intermediate levels in which the causes of drop-out are compared. The family, economic and school problems are listed. Drop-out at the end of the primary stage is considered to be particularly acute.

The problems of socio-economically linked educational disadvantage appear to have been of particular concern in Mexico. A Latin American conference was held in Mexico in 1963 and the working documents are brought together in one volume (1964). Among the working papers is a special pilot study, undertaken by the National Institute of Education of Mexico, which aims to determine the social, economic and cultural factors extraneous to the school, the incidence of which affects a child's education. An analysis of the data indicated that the socio-economic level and the cultural level of the family are closely related to the children's education and their school achievement. Peña (1968) also reports a study in Mexico of the obstacles to education attributable to socio-economic stratification. She emphasizes that, although not comprehensive, this study shows the probable influence exerted by the socio-economic background on individual capacity for study and on the desire to study

felt by schoolchildren. The author recommends an improvement of both the school planning services and the methods of forming educational policy.

A report by Walker (1968) gives a vivid description of Puerto Rico's massive effort to improve the plight of its drop-outs. The *Centro de oportunidades educativas* has an enrolment of 800 young men and women who are drop-outs from school systems. The pupils follow a non-graded programme adapted to their talents and needs. Most of the pupils are resident and are assigned to one of six major divisions of instruction or clusters. All clusters are for work leading to regular high school diplomas each of which has a specific aim involving orientation towards the professions, technical training, vocational training, work for those who have not yet decided on a career, instruction at first year university level, and post-high-school work. The school is characterized by organizational flexibility and has enabled a large proportion of the students to complete courses successfully.

Chapter three

The magnitude and location

As an aid to understanding the frailness of current attempts to evaluate wastage it is worth while to repeat certain cautionary remarks made in chapter 1.

Any comparative study of the size of educational wastage made at this point in time must be substantially inadequate in that the most essential aspects of education systems, their objectives and their provisions, have no internationally agreed standards. Objectives appropriate for one country are not necessarily appropriate for another. While it is not essential to seek uniformity of objectives in order to carry out international comparisons—as the work of the International Association for the Evaluation of Educational Achievement (IEA) has already fully demonstrated—it is important to know what a country's objectives are and in what way they differ from those of other countries if one is to say, in a manner which is internationally helpful, how far the objectives have been met. Similarly, the differential economic resources are inevitably related to the wide disparity in the total educational provision and its distribution. A perfectly efficient system of education that catered for only one per cent of the school-age population would merely disguise its wastage.

IDENTIFYING ITS FORMS

While the behaviour of education systems can be monitored by counting relevant observations of changes in them, such observations vary in the degree of reliance that can be placed upon them. There is usually a compromise to be sought between convenience of observations and the validity with which they portray the characteristic which is under study. Thus, not all of the five forms of educational wastage already identified lend themselves to convenient and valid assessment. The impracticability

of estimating the appropriateness of a nation's objectives has already been referred to. A similar difficulty surrounds the first two forms of wastage identified i.e. failure of a system to (a) provide universal education and (b) recruit children into it. Many education systems are unable to distinguish between the number of children for which they provide and the number they manage to recruit. The best available index only relates the number of children in school to the number of children of that age in the population. It is known as the Adjusted School Enrolment Ratio for first and second level of education and it is published for many, but not all countries, in the *Unesco Statistical Yearbook 1969* (tables 2.5 and 2.6). The complement of this ratio might be regarded as a measure of wastage from a combination of the first two sources, except that it could be objected to, as reflecting merely what countries are not yet attempting to achieve. In any case, the fact that it is not available for a considerable number of countries, for which other measures of wastage are, reduces its usefulness.

Drop-out. Drop-out, whether voluntary or involuntary, is the most convenient event to observe in identifying the failure of a system to hold children within it. Its validity is open to question since even a little education may be considered to be valuable and the flexibility of a system in permitting drop-out before the end of a cycle may in fact serve to adjust manpower needs, particularly at the second level. Not all drop-out represents waste; it is also open to legal restriction. In the majority of countries of Europe, North America and Oceania, it is rare for children to leave school before the end of the period of compulsory education. Nevertheless, not all of these countries are yet able to provide facilities for all children in all districts within the compulsory age limits, nor do they all enforce the compulsory education laws effectively. In some cases, a proportion of children leave school prematurely. Furthermore, the periods of compulsory schooling vary in length. In over three-quarters of the countries in this group the compulsory period is eight or nine years, but there are countries where it is as low as four or five years, e.g. Portugal and Turkey, while in some of the states of the United States of America it is as high as twelve years. For this reason the proportion of children in each group who are attending school varies considerably throughout the senior primary and the junior secondary cycle.

The highest rate of school leaving usually occurs among those age groups for whom the specialized cycle of senior secondary schooling is provided. Such rates do not, however, give an estimate of premature leaving, unless the prior judgement is made that all children should

continue with full-time schooling until the age of 17 or 18 years. If, on the other hand, the cycle-of-schooling concept is accepted, the drop-out rate could be determined only from statistics of the enrolment and the leaving of pupils in each of the specialized courses available to them at this level. Comprehensive statistics of this sort are not usually available.

Repetition. The most convenient event through which to observe the inefficiency of the system in achieving its objectives is repetition. Once again its validity may be questioned. It may be regarded as an effective way of ensuring that children have the opportunity to recover from earlier failure and of ensuring that planned achievement levels are met. Moreover the situation differs markedly between countries that have a considerable degree of automatic promotion and those that retain strict grade promotion. In the former case, in countries such as the United Kingdom, Australia, New Zealand, many provinces of Canada and states of the United States of America where promotion is for the most part based upon age, repetition of classes occurs almost only when children have been absent from school for long periods, for reasons such as severe illness or frequent change of residence. On the other hand, in countries that have promotion standards based upon the levels of attainment that pupils of average or above average ability are thought capable of reaching year by year, the failure rate may be considerable. When, in addition, pupils who fail are prevented from leaving school by compulsory laws the proportion of repeaters in each grade is high and increases throughout the course of schooling.

Despite their questionable validity, drop-out and repetition are the most convenient, quantifiable symptoms of educational wastage and, once adopted, the methodological problems centre on identifying and quantifying them in internationally comparable forms, and locating them within the system. Ideally the data on which measures of wastage would be based would be derived from individual record systems for each child. However, even highly developed countries find this procedure too expensive and the most commonly available data merely state the number of children enrolled in each grade in each year.

EARLIER EFFORTS AT DATA COLLECTION

Various attempts, largely unsatisfactory, have been made in the past to measure wastage using only cross-sectional enrolment figures. International compilation of the estimates of wastage made in various countries have rarely been comprehensive, and the differing statistical bases have

made comparisons hazardous. The following are examples of the kind of data that have been analysed over the past decade or so. Incomplete and often unsatisfactory as the data are, they serve to indicate the seriousness of the problem.

Asia. In preparation for a seminar on educational wastage and school drop-outs, the Unesco Regional Office for Education in Asia made analyses of a wide range of available statistics, and this led to a useful approximation to the situation obtaining during the 1959-65 period among the countries participating in the Karachi Plan. The study[1] revealed a considerable variation in retention rates among the different countries. Some, like the Republic of China, the Republic of Korea and Malaysia had reported relatively little drop-out; others, like Burma, Laos, and Pakistan had very high rates.

Africa. For the Conference on Education and Scientific and Technical Training in Relation to Development in Africa (CESTA), convened in Nairobi, July 1968, by Unesco and the Organization of African Unity, a valuable estimate was made of the retention rate at the first level of education in 22 of the 35 countries of middle Africa.[2] The purpose was to compare the actual situation, with the targets established by the Conference of African States on the Development of Education in Africa, held at Addis Ababa in 1961. The target retention rates, grade by grade, had been based on the aim of having no more than 10 per cent drop-out from each successive grade. The achievement of this would have resulted in a final enrolment of 55 pupils in grade 6 out of every hundred who entered grade 1. Estimates of the actual situation showed that only 32 pupils reached grade 6 in 1965 out of the 100 entrants to grade 1 in 1960. This average figure, of course, gives no indication of the individual differences among the 22 countries. They varied considerably and only three of them came close to the target.

The same document noted a discrepancy between the high drop-out rate and the considerable increase (35 per cent) in primary school enrolments over the period—in spite of the fact that there was an increase of only 20 per cent enrolment in grade 1. A study of available data on repetition in a few countries showed that many pupils in each class were repeating, and this was suggested as a probable explanation of part of the increased enrolment.

1. Unesco. Technical Seminar on Educational Wastage and School Drop-outs. *Final Report*, Bangkok, Unesco Regional Office for Education in Asia, 1966.

2. Unesco. Regional Educational Targets and Achievements 1960-1965. Paris, Unesco, 1968. (Document UNESCO-OAU/CESTA/Ref. 2.)

Latin America. Various early studies [1, 2, 3] in Latin American countries showed that during the 1950s and early 1960s the drop-out rate was so high that in general only about a quarter of the children who enrolled in a grade 1 reached grade 6. Statistics of repetition have been less frequently collected, and it is not possible to get a comprehensive picture of the situation. One study in Venezuela[4] shows promotion, repetition and drop-out percentages over a period of five years; but this example may not be typical of the relationship between these factors.

From 1956 to 1965 the population of the primary and secondary schools and universities increased by some 60 per cent throughout Latin America, more than twice the rate of population growth in the same period. However, the increase in enrolment did not affect all three levels of education equally. Primary enrolment increased by 57.6 per cent, secondary by 110.6 per cent, and tertiary by 92.3 per cent. Despite the rapid growth at the secondary and tertiary levels, the proportion of the relevant age-group enrolled was below that found in more advanced regions; even with this low proportion of pupils entering secondary schools the amount of premature leaving was considerable. The retention rate in general secondary education ranged from 15 to 60 per cent, for apparent cohorts terminating in the main between 1960 and 1963.

Estimating the cost

In the past decade of educational expansion, the financing of education systems has weighed heavily on all governments, especially upon those of the developing countries. In general, it appears that expenditure has been rising more rapidly than can be explained simply by increases in school enrolments and in duration of schooling. This, in turn, means that the unit cost of education has been rising.

There are many causes for this increase in unit costs, and most of them can be reasonably attributed to an improvement in the quality of

1. Brown, R.I. *A survey of wastage problems in elementary education*, Bangkok, Unesco Regional Office for Education in Asia, 1966.

2. Institut d'étude du développement économique et social (Paris). *Development prospects for education in 19 Latin American countries (1960-1970)*. Paris, 1962.

3. Unesco, *Educational developments in Latin America, 1956-1965*. Santiago, Unesco Regional Office for Education, 1966. (Document UNESCO/MENEDECAL/6.)

4. Unesco. *Educación e economía en Venezuela*. Paris, Unesco, 1962.

education. For example, there has been an extension of the services available to the schools, such as guidance and psychological services; there have been improvements in the supply of school equipment, materials, and buildings; higher salaries have been paid to teachers; and improved teacher training is gradually being effected. Such measures have improved quality, and they have been costly.

It has become clear, however, that many countries will not be in a financial position to continue their educational advancement unless ways are found of obtaining an improved return for their expenditure. At the Nairobi Conference in 1968, for example, it was shown that most of the African nations had been unable to reach the targets they had set for themselves at Addis Ababa in 1961; and, with financial resources strained to the limit, it seems certain that they must try to effect a real increase in the return from expenditure, by seeking out and reducing sources of inefficiency.

There can be no doubt that, in many countries, part of the increasing unit cost of education results not from improvements or expansion but rather from wastage in the form of repetition of grades and of premature school leaving. Through the effect of these, the number of pupil-years needed for a given group of children to complete a cycle of education or to obtain a given educational qualification is higher than the optimum time that would be required if there were no wastage. Every school place occupied by a repeating pupil is causing additional expenditure that would not be needed if he were making normal progress.

Furthermore, when educational resources are in limited supply, fewer places will be available for other children not yet provided for, whose educational potentiality and progress might be better than that of the repeaters and drop-outs. The cost of providing classrooms, equipment, materials and teachers for pupils who will either drop out of the school system before acquiring even functional literacy or will repeat several grades of schooling before completing a given cycle of education is, therefore, one of the serious hindrances to educational advancement.

It is not possible to make a global estimate of the cost of wastage in monetary terms, but all the indications are that it is vast, and indeed that in many countries it accounts for a considerable proportion of the education budget. Without questioning too closely, the methods employed, or the data from which the figures were prepared, it is worth considering some reported estimates of the gross cost of wastage in certain regions. In the final report of the Technical Seminar on Educational Wastage and School Drop-outs, mentioned earlier, a minimum estimate was that drop-out and repetition were costing the seventeen

Asian countries represented in the Karachi Plan about $100 million annually. The magnitude of the problem varied greatly from country to country. In some countries it was estimated that as much as 25 per cent of the education budget was involved, while the median was 8 per cent.

For Latin America it has been estimated that the total expenditure on education at all levels, public and private, for the year 1960 was $1,584 million and that of this sum 72 per cent, or $1,140 million, was expended upon pupils who did not complete the cycle of education they embarked upon. More than half the expenditure (53.8 per cent) was for primary education, where, with an output of only 10 per cent, the cost of each graduate was 4.125 times what it should have been; 30.5 per cent of the expenditure was for secondary education where the cost of each graduate was 3.975 times what it should have been; and 15.7 per cent was for higher education, where the cost was 2.15 times the optimum amount. At the primary level, it was estimated that, if the output of the schools could be raised to 20 per cent, this doubling of the number of graduates could be achieved at almost the same cost.

THE 1969-70 UNESCO: IBE SURVEY

Such have been the estimates of wastage prior to the survey carried out in 1969-70 by Unesco.[1] The 1969 survey, as we shall now refer to it, is of importance for a number of reasons: first, because it has demonstrated that such international data can be gathered on a common basis and covering the same period of educational development; secondly because of the method which it employs; and thirdly because of the inferences that it makes possible. Of the 148 Member States and Territories answering the questionnaire 58 were able to provide data complete enough for an analysis to be made. Although data were provided in the same basic form, the differences between countries in their educational provisions, in the structure of their systems and in their socio-economic conditions prevents direct comparisons. The same reasons militate against the pooling of data for groups of countries.

The methodology

Earlier studies either had methodological disadvantages which the 1969 survey overcame or did not yield indices on a standardized data base.

1. Unesco: IBE *A statistical study of wastage at school.* Paris, 1971. (Studies and surveys in comparative education.)

Both the virtues and the disadvantages of the 1969 survey arise from the simplicity of the data on which it is based. Each country supplied the number of children enrolled near the beginning of the school year in each grade, by sex where such information was available, and the number of those enrolled who were repeating that year, for as many years between 1960/61 and 1967/68 as were available. Repeaters were defined as 'pupils who remain in the same grade and do the same work as in the previous year'. The actual rates of repetition and the actual rates of depletion of the cohort, regarded as drop-out, were observed between successive years and this information was used to derive a rate accounting for, or best fitting, the observed trend. Rarely was there sufficient data for a country to cover the complete duration of a cohort's occupation of a cycle allowing for multiple repetition. Consequently, the derived rates were applied to a theoretical cohort of 1,000 pupils. Certain assumptions were necessary which, although plausible, were not susceptible of direct testing. The most important assumption was that the same rate of repetition and drop-out held for those repeating a grade as for those enrolled for the first time. The second assumption, that children who enter the final grade of a cycle, and who do not repeat it, complete it successfully, was enforced by the lack of information on the numbers of children actually graduating from the last grade of a cycle. Despite the limitations that these assumptions and the unknown reliability of data collection and reporting implied, the adoption of the method represents a considerable practical advance in the international study of educational wastage.

An illustrative case. The first and basic outcome of derived rates of drop-out and repetition is the construction of the flow of a theoretical cohort of 1,000 pupils allowing for multiple repetitions. The behaviour of such a cohort is demonstrated in the diagram. The flow relates to the Algerian first level of education and is based upon actual time series from 1963/64 to 1968/69. The example is chosen because, despite adverse circumstances during the period, the statistical records maintained in Algeria were of the highest level.

Once such a cohort flow has been constructed, it can be used to count the incidence among each 1,000 pupils in a cohort of certain events, in particular, repetition, drop-out, promotion and transition. By treating each year as if it had the same value, the total input to the cohort's passage through the cycle can be estimated as the total number of pupil-years involved. The output from the cohort's passage is the number of graduates from the complete cycle multiplied by the number of grades

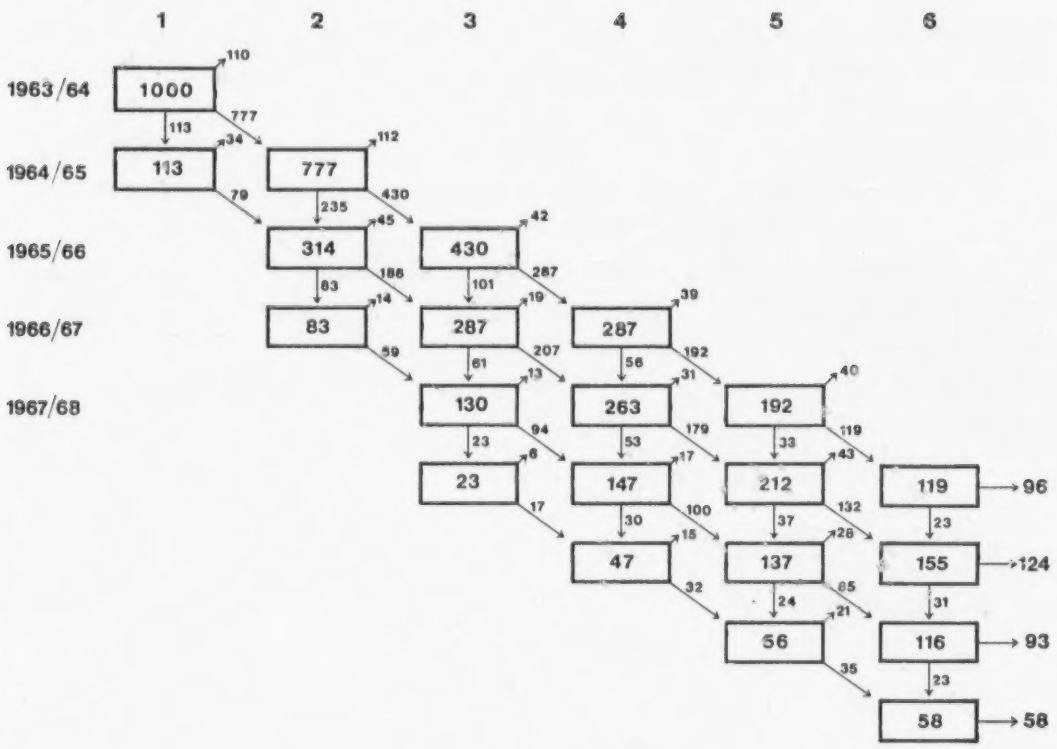

Diagram showing the flow of a cohort of 1,000 Algerian boys and girls (urban and rural combined) at the first level of education; based on data for 1963/64-1967/68.

they have completed. When the input is divided by the output the resulting input/output ratio is a measure of the system's efficiency. Indeed the reciprocal of the input/output ratio is sometimes called a coefficient of efficiency. The excess of input over output can be divided into the two parts for which graduates and drop-outs are separately responsible. The profile of drop-out and promotion, and the repetition and transition rates for the various grades of the cycle demonstrate the points at which wastage most seriously occurs. Promotion rates show the number of pupils per thousand ultimately satisfying each grade, while the transition rates express the number of pupils ultimately promoted from a grade as a proportion of the number enrolled in it. Thus the indices permit not only an over-all estimate of wastage, but its location within the grades of the system.

During the discussions at the 1970 International Conference on Education, questions were asked which demonstrated some doubts about the value of such indices to individual countries whose interests lay in identifying those factors associated with wastage. For example, one

delegate asked whether the method permitted a diagnostic study of the effect of such factors as sex, age, socio-economic status and regional distribution. The answer was that the Unesco survey had already demonstrated such possibilities. For many countries separate indices for boys and girls had been derived and, for a few countries, urban and rural variation had been shown. In other words, indices could be produce in relation to any form of variation for which records were available. The indices had not so far been considered as lending themselves to study of the interaction between factors, but there would be no necessary obstacles to studies being made which used the cohort flow as a basis for examining interaction of factors.

An example of the descriptive power of the indices can be given (Tables 1-4) for the Algerian first level of education already presented in the flow diagram.

Table 1
Algeria: the first part of the table shows the pupil-years invested and the input/output ratio; the second part separates the relative contribution of drop-outs and graduates to wastage. The cohorts are based on actual rates observed between 1963/64 and 1967/68 for the first level of education (urban and rural).

	Total	Male	Female
Pupil-years invested (normal duration: 6 years)	13.3	12.6	15.6
Input/output ratio	2.2	2.1	2.6

Total number of pupil-years invested per 1,000 pupils	Total of non-effective pupil-years (i.e. not leading to promotion or graduation)	Total of excess pupil-years	Per cent of excess attributable to		Places absorbed by drop-outs, but effective (i.e. leading to promotion)
			drop-out	graduates	
4,946	1,555	2,720	82.2	17.8	1,165

Table 2
Algeria: output by number of repeating years for the first level of education (urban and rural). The cohorts are based on actual rates observed between 1963/64 and 1967/68.

Number of repeating years	Output			Percentage distribution		
	Total	Male	Female	Total	Male	Female
0	96	90	72	25.9	22.8	24.2
1	124	139	96	33.4	35.3	32.2
2	93	104	78	25.1	26.4	26.2
3	58	61	52	15.6	15.5	17.4
4 and +	—	—	—	—	—	—
Total	371	394	298	100.0	100.0	100.0

Table 3
Algeria: promotion and drop-out profile and transition rates for the first level of education (urban and rural). The cohorts are based on actual rates observed between 1963/64 and 1967/68.

Grades	Promotion (grade 1 = 1000)			Drop-out			Transition rates (%)		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
1	1000	1000	1000	144	124	163	—	—	—
2	856	876	837	171	198	203	85.6	87.6	83.7
3	685	678	634	80	55	95	80.0	77.4	75.7
4	605	623	539	102	110	106	88.3	91.9	85.0
5	503	513	433	132	119	135	83.1	82.3	80.3
6	371	394	298	—	—	—	73.8	76.8	68.8
Total	—	—	—	629	606	702	—	—	—

Table 4
Algeria: repetition, promotion and drop-out rates at the first level of education (urban and rural). The cohorts are based on actual rates observed between 1963/64 and 1967/68.

Grade	Rates of	Total		Male		Female	
		1963/64	1967/68	1963/64	1967/68	1963/64	1967/68
1	Repetition	113	105	116	108	110	102
	Promotion	777	825	786	802	764	845
	Drop-out	110	70	98	90	126	53
2	Repetition	309	110	301	103	320	120
	Promotion	641	840	559	877	671	830
	Drop-out	50	50	140	20	9	50
3	Repetition	272	175	277	166	265	187
	Promotion	665	726	690	740	622	705
	Drop-out	63	99	33	94	113	108
4	Repetition	251	203	247	192	256	222
	Promotion	668	680	693	704	624	639
	Drop-out	81	117	60	104	120	139
5	Repetition	240	173	247	167	227	185
	Promotion	629	621	650	657	603	580
	Drop-out	131	206	103	176	170	235
6	Repetition	262	197	270	194	247	202
	Output	738	803	730	806	753	798

It should be remembered that the period covered by these tables was a critical one for Algeria. Immediately after gaining independence the working of the education system suffered from obvious problems (including the shortage of teaching staff during the recovery period). Table 1 makes the most general statements about the efficiency of the system. The input/output ratio indicates that the effective output from the system costs more than twice as much in terms of pupil-years invested as would have been minimally required, i.e., 2.1 times for boys and 2.6 times for girls. Table 1 also shows that an average of 13.3 pupil-years was required to produce each graduate, against the planned number of 6 pupil-years; the average was 12.6 for boys and 15.6 for girls. The second part of the table also enables the relative contribution of drop-outs and graduates to wastage to be separated. The idea of non-effective

years is introduced, by which is meant the number of year-places occupied by pupils in the cohort, from which no promotion or graduation ensued. The excess number of pupil-years for each 1000 pupils of the Algerian cohort is shown to be 2,720 and, of these, drop-outs were responsible for 82.2 per cent and graduates for 17.8 per cent. It should be noted, however, that of these excess pupil-years absorbed by drop-outs, 1,165 (42.8 per cent) were effective in the sense that they led to promotion. Thus the actual benefit of drop-outs to the economy may have been greater than the total loss ascribed to them.

Table 2 is at the next level of generality and shows the number of graduates involved in repetition according to the number of years of repetition. For this purpose, grades in which repetition took place are not shown. It appears that 74.1 per cent of the cohort required one or more repeating year. A comparison of the percentage distribution for boys and girls shows that the difference between the relative outputs for various numbers of repetitions are slight. That is to say, neither sex, relative to its own output, profits more than the other from repetition.

Table 3 shows the expected frequencies, per 1,000 of the cohort, of ultimate promotion or drop-out for each grade and also the transition rate. Perhaps the most startling figure in the table is that which shows that 629 of each 1,000 in the cohort, dropped out before the end of the cycle: for boys the figure is 606 per 1,000, and for girls 702. Table 4 displays the rates observed for 1963/64 and 1967/68 only, although the intervening years' rates were used to estimate school efficiency. The presentation of two years' data, separated in time, focuses attention on the variability of the indices and calls for an attempt to explain major changes. For both years, repetition is higher in grades subsequent to grade 1. While both drop-out and repetition have decreased as a whole in the later year, in grades 3, 4, and 5 drop-out has in fact increased.

Should more detailed information be required, the difference between urban and rural schools can be seen from Tables 5 and 6 which show the promotion and drop-out profile and transition rates for the first-level pupils in Algeria.

It should be stressed that, during the period 1963/64 to 1968/69, Algeria registered much internal migration mainly from rural to urban zones and a spectacular school expansion. This example is therefore intended to illustrate the interpretation of the indices rather than to imply an actual statement of the real effectiveness of the education systems in these two areas. There are clearly substantial differences between the two types of area. Not only is wastage generally higher in rural schools, but girls in rural areas are subject to much higher wastage rates than

Table 5
Algeria: urban schools, first level. Promotion and drop-out profile and transition rates (per cent)

Grades	Promotion (grade 1 = 1000)			Drop-out			Transition rates (%)		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
1	1000	1000	1000	152	161	140	—	—	—
2	848	839	860	75	114	90	84.8	83.9	86.0
3	773	725	770	95	60	115	91.2	86.4	89.5
4	678	665	655	143	134	145	87.7	91.7	85.1
5	535	531	510	105	99	111	78.9	79.8	77.9
6	430	432	399	—	—	—	80.4	81.4	78.2
Total	—	—	—	570	568	601	—	—	—

Table 6
Algeria: rural schools, first level. Promotion and drop-out profile and transition rates (per cent)

Grades	Promotion (grade 1 = 1000)			Drop-out			Transition rates (%)		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
1	1000	1000	1000	138	108	193	—	—	—
2	862	892	807	306	206	354	86.2	89.2	80.7
3	556	686	453	66	101	76	64.5	76.9	56.1
4	490	585	377	49	83	51	88.1	85.3	83.2
5	441	502	326	131	137	116	90.0	85.8	86.5
6	310	365	210	—	—	—	70.3	72.7	64.4
Total	—	—	—	690	635	790	—	—	—

their counterparts in urban areas. One of the main reasons appears to be the high drop-out rate in grade 2, where 354 girls per 1,000 in rural areas dropped out as against 90 in urban areas. Indeed, only 453 in every 1,000 reach grade 3 in the rural areas against 770 in urban areas.

Regional distributions

Input/output ratios. The statistical tables arising from the 1969 survey make fascinating reading and it is difficult to do them justice in a short space. Moreover, the indices cannot be directly compared between countries, nor can they be combined without becoming misleading. The Unesco regions are continental and the 58 countries for which data are available are not always representative of their region. Some indication of the distribution of wastage is desirable however, and Table 7 shows the median and range of input/output ratios derived from each group of countries for the first level of education.

Table 7
The median and range of input/output ratios for the first level of education derived from regionally grouped countries

	Median	Range
18 African countries	2.00	1.24-3.55
13 Latin American countries	1.90	1.53-2.42
13 Asian countries	1.31	1.003-2.48
11 European countries	1.20	1.00-1.56

The meaning of these indices needs to be remembered in scanning the table. The median input/output ratio for the African countries indicates that half the educational provision at the primary level is ineffective in that it is involved with repetition and drop-out. The geographical distribution of wastage emphasizes not only the difference between developed and developing countries but also their differences in investment in education. The median ratio for Europe is lower than the lowest ratios for Africa and Latin America and the highest European ratio is lower than the median for African and Latin American countries.

Such ratios relate only to those children who are in school. It must be remembered that many children do not even have the opportunity to become drop-outs or repeaters. A useful index of educational development is the Adjusted School Enrolment Ratio (see page 40) for first and second levels of education. The median values for the countries quoted above are: African countries 40, Latin American countries 63,

Asian countries 63, European countries 78. Thus in general, wastage tends to be higher in those regions where education is less developed.

The same general pattern of regional wastage distribution is evident at the second level of education (Table 8).

Table 8
The median and range of input/output ratios for the first and second cycles of the second level education derived from regionally grouped countries

	2nd level 1st cycle		2nd level 2nd cycle	
	Median	Range	Median	Range
13 African countries	1.53	1.15-1.79		
10 African countries			1.72	1.08-2.59
7 Latin American countries	1.40	1.32-1.51		
6 Latin American countries			1.18	1.13-1.32
12 Asian countries	1.20	1.002-2.06		
8 Asian countries			1.28	1.002-3.23
10 European countries	1.20	1.09-1.65		
3 European countries			1.21	1.13-1.24

The differences are not so great at the second level nor are the median values quite so high, though much of this may be the result of a ruthless selection by wastage at the primary level.

The location of wastage within systems is vital as a step towards its reduction and at the very simplest level we can ask whether the symptoms of wastage are more in evidence at the beginning of a cycle or towards the end of a cycle. The difference between these two points in the cycle may be critical in identifying major contributory factors. High drop-out at the beginning of the first level, may be associated with inadequate orientation of the child and his family toward school and of the school toward the child and the community. It may also be associated with predominantly agrarian societies, where the child can be usefully occupied by the family. Higher drop-out towards the end of the first level is more likely to be associated with acceptance by the family of a minimally sufficient literacy and numeracy for viable occupation. Of the 49 countries for which drop-out from the various grades was reported 15 of the 17 African nations, all 13 American nations and 8 of the 10

Asian nations had their highest first-level drop-out in grade 1, while 8 of the 10 European nations had their highest drop-out in the penultimate grade (the last grade for which drop-out is recorded). It is perhaps relevant at this stage to make the point that the observations are not merely an artifact of the existence or non-existence of compulsory schooling. The countries reported here are those which permit drop-out within the first level of education either through the absence of legal sanctions or of the means to enforce those that exist.

Urban/rural variations. The possibility that this is partly an agrarian/industrial phenomenon can be tested by looking at those countries for which urban/rural data are available. Table 9 shows the result when the numbers of drop-outs per 1,000 in the first two grades and last two grades are combined for the six countries for which urban and rural data are available in the 1969 survey.

Table 9
Sums of numbers of drop-outs per 1,000 pupils for six countries

	Urban	Rural
First 2 grades	1324	3087
Last 2 grades	808	887

Chi-squared is significant for this table beyond the .001 level. In other words, more drop-outs occur in urban areas in the last two grades and in rural areas in the first two grades than would be expected from chance variation of grade drop-out with urban/rural character.

When, for the same countries, the table is reproduced with respect to numbers of repetitions, the result is as follows:

Table 10
Sums of numbers of repetitions per 1,000 pupils for six countries

	Urban	Rural
First 2 grades	3086	4270
Last 2 grades	756	501

Chi-squared is significant beyond the .001 level. The result supports the hypothesis that the grades in which drop-out occurs are related to the urban/rural character of schools.

A similar effect might occur in the differential drop-out of boys and girls, i.e. that in agrarian communities girls would be easily absorbed back into families after drop-out, although the variation in community practice in according a lower status to girls would complicate this hypothesis. When the drop-out figures for the 33 countries supplying separate data for boys and girls is examined, all 8 Asian and 11 of the 12 African countries show higher drop-out for girls than for boys, while 6 of the 8 South American and 4 of 5 European countries do not show such a variation. If the higher drop-out of girls when it occurs is associated with traditional role conception, it would be expected to be more evident in rural communities which are less influenced by liberal views of the education of girls. On the other hand, no such variation would be expected to occur in communities which traditionally accord equal status to girls. Unfortunately, data giving urban/rural drop-out data for each sex separately is available for only 1 African country (Table 11) and 4 South American countries (Table 12).

Table 11
Numbers of drop-outs, per 1,000 pupils of each sex, in urban and rural areas separately, in one African country

	Urban	Rural
Boys	568	635
Girls	601	790

In Table 11 Chi-squared is significant at the 5 per cent level and there are more male drop-outs in the urban areas and more female drop-outs in the rural areas than would have been expected by chance variations. Moreover, the number of female drop-outs is significantly greater than the number of male drop-outs in rural groups although not among the urban groups.

Table 12
Sums of numbers of drop-outs, per 1,000 pupils of each sex, for urban and rural areas separately, in four South American countries (Colombia, Dominican Republic, Guatemala and Panama)

	Urban	Rural
Boys	1762	3349
Girls	1651	3322

Chi-squared is not significant and therefore the hypothesis of no relationship between sex and drop-outs and urban/rural living cannot be rejected. It is an interesting observation that in urban areas the number of male drop-outs is significantly greater than the number of female drop-outs though not in the rural situation.

Some caution must be exercised in the interpretation of the tables given above particularly where they refer to data pooled across countries. In the first place, the observations which are compared are not direct observations but they are inferred observations about a theoretical cohort. Secondly, they are relative frequencies and the effect is to remove differences in absolute numbers between countries and groups which are being combined. The justification for employing these tests of significance under these conditions is pragmatic in that it is desirable to test hypotheses despite the fact that the data are not derived from direct observations under known conditions of sampling. Unfortunately, data is not sufficient at the second level of education to sustain the tests of hypotheses that have just been made in relation to the first level.

Age/grade factors. A parallel enquiry into the age compositions of grades was made in the same 1969 survey and data relating to either 1967/68 or 1968/69 were available for 8 African countries, 9 Asian countries, 12 American and 13 European. Data for earlier years were also submitted but since they spanned a much wider range of non-comparable years they are not dealt with here. Median and modal ages were computed for the first and last grades of first level of education for each country and were compared with the standard age of enrolment expected by the system. A word of caution is needed here, however: the survey asked for data to be supplied relating to the beginning of the school year and for a statement to be made if there were material variations from this.

However, depending upon the date at which the data were gathered in relation to the beginning of the school year, children would be expected to be on average older than the standard age for enrolment at the beginning of the grade. For example, if children begin in grade 1 only after they become 6, at the beginning of the school year they will range in age from 6:0 to 6:11 years and six months later approximately half the children will be 7:0 to 7:5 years and the median would be approximately 6:11.5 years. Since it is enrolment data with which the survey deals, it is likely that the age distribution will relate to the beginning of the school year as requested by the survey. However, there are wide differences in practice, between and within countries in the admission of children to the first grade and it would be unsafe to regard a difference of median from standard age of less than one year as carrying implications of retardation.

Another aspect of age distribution is worthy of attention. From the point of view of the teacher, heterogeneity of age in a grade raises particular teaching problems and in general requires a higher level of teaching skill. The modal age for a grade is the most frequently occurring age and the proportion of children who are of that age is an indication of the degree of age homogeneity in the grade.

In Table 13 seven pieces of information are given for each of the four regional groups of countries for which data can be analysed. The information given in the table (under the same numeration) is as follows:

1. The range of differences between median and standard age for the first grade of the first cycle (median age always exceeds standard age).

2. The range of differences between median and standard age for the final grade of the first cycle.

3. The Spearman rank-order correlation of excess of median age over standard age between first and final grades of the first cycle.

4. The range of percentages of children in the first grade of the first cycle who are of modal age.

5. The range of percentages of children in the final grade of the first cycle who are of modal age.

6. The median percentage of children who are of modal age in the first grade of the first cycle.

7. The median percentage of children who are of modal age in the final grade of the first cycle.

Table 13
Age differences at the first and final grades of the first cycle in four regional groups of countries

	Africa	Asia	South America	Europe
1.	0.37-2.24	0.48-1.48	0.50-1.85	0.51-0.88
2.	0.67-3.73	0.58-2.88	0.91-2.34	0.53-0.95
3.	0.79	0.83	0.67	0.73
4.	21.7-68.7	32.7-83.7	27.7-57.1	51.1-96.0
5.	19.7-52.2	21.3-79.0	20.0-48.2	37.1-90.9
6.	54.0	45.3	38.1	77.5
7.	29.8	34.9	29.1	62.9

For all four groups of countries, the distance of median age above standard age increases between first and final grade. Only among the European group are there no countries where median age is more than one year above standard age in first or final grades. In every other group (African countries 6 out of 8, South American countries 6 out of 12, Asian countries 5 out of 11), there were countries where median age was at least one year above standard age in the first grade. In the final grade, among the 8 African countries, all but two had median ages at least two years above standard age and only one had less than one year. Among the South American countries, 9 out of 12 had median ages at least one year above, and among 11 Asian countries, 7 were at least one year above.

The rank order correlations of distance of median age above standard age for first and final grades are all significant and suggest that retardation in grade 1 is to a considerable extent responsible for greater retardation in the final grade. The median percentages of children at modal age decrease for all groups of countries between first and final grade, suggesting that the problems of heterogeneous age groups increase over the grades. Moreover the percentage (of those in the grade) who are of modal age tends to be low in countries where the distance of the median above standard age is greater. That the distance of median age above standard age is related to wastage is evident in the fact that for the twenty-four countries for which both input/output ratios and age distributions in primary grades were available, the rank-order correlations of ratios with differences were 0.61 and 0.68 for first and last grades respectively.

THE IMPLICATIONS FOR FUTURE SURVEYS

Questions of the complexity just discussed are at the farthest degree of remove from the actual data available from the 1969 survey as one would wish to go. If the observations on which the survey is based were available in finer detail within countries, a much richer range of questions could be answered without any change in the methodology that has been used so far. The technique and the observations currently lend themselves to questions of the following kind:

The relative magnitude of wastage. How much of the investment of educational resources per 1,000 pupils pursuing a given cycle, fails to produce the expected return?

The absolute magnitude of wastage. What is the total loss to the country represented by the relative magnitude of wastage multiplied by the number of thousands of children in the cohort under study?

The structural location of wastage. In which grades of the cycle does the greatest wastage occur?

The differentiated sources of wastage. What proportion of wastage in each grade is attributable to drop-out and repetition respectively?

Between system variations in wastage. In so far as systems are comparable in provision and structure, are there differences between groups of countries in the relative size, source and structural location of wastage?

Between region variation in wastage. Are there within a country differences between environmentally or socially distinct regions in the relative size, source and location of wastage?

Between school variation in wastage. Are there within regionally homogeneous groups of schools, differences in wastage rates amongst schools differing in school characteristics?

Between child variations in wastage. Are there within, across and between countries, differences between children possessing different characteristics in their rate of drop-out and repetition?

For all countries of the world, answers to these questions are of the greatest moment. The answers would help to determine the seriousness of the problem of educational wastage and to locate it physically and structurally. Some questions would still remain unanswered and these are questions related to the planning of action to remedy the wastage situation. In so far as wastage is attributable to inefficient operation

of parts of the system, governments are able to act only if the information they have is related to units of the system that can be manipulated to secure improvements. Until it is possible to secure analysis of wastage at the level of the individual school and preferably of each grade within each school, a government is not in a strong position to plan and cost its action.

There is a further drawback to the methodology which has been used during the 1969 survey. Wastage has been costed by pupil-years involved in repetition and drop-out. So far as the internal efficiency of the school system is concerned, while drop-out and repetition are convenient phenomena to observe, they are not the most directly manipulable events. The critical point of decision is reached when it is decided that the child has met or failed to meet the criteria for passing the grade. Much can be done to affect wastage rates by modifying the pass rate. The action to be taken in the event of failure to meet the criteria of each grade is the next event which is worthy of scrutiny. Action which prevents the whole of a grade being repeated or which prevents children from dropping out of school as a consequence of failure ought to be pin-pointed by those planning to remedy wastage rates. Drop-out which is a consequence of educational failure ought to be distinguished from drop-out which is voluntary and unrelated to educational performance. Such forms of voluntary drop-out are usually attributable to external factors which the school system must take into account by other kinds of social and economic action. Only if the magnitude and location of this form of drop-out is known can appropriate action follow.

These comments should not be taken to diminish the worth of the 1969 survey and the inferences to be drawn from it. In order to secure more positive information which would help to remedy the education wastage problem, there would have to be a reorganization of the ways in which countries currently gather data from their schools. The hope would be that in any such revision of national data gathering the observations recorded would enable comparisons to be made between countries which differed in their mode of institutionalizing their objectives and failure to meet these objectives. It might then become possible for countries to discuss the objectives themselves with a view to improving the lot of mankind throughout the world.

Chapter four

The internal factors: problems and remedies

For the purpose of reviewing the causes of wastage and appropriate remedies, it is convenient to distinguish the factors inherent in the education system from the external factors. It may be questioned, however, whether these two types of factor are really independent and whether all that goes on in the school is not influenced and even determined by external factors. We are convinced that this is so and cannot ignore the fact in this study.

Anyhow the purpose is not to single out the defective school systems and balance their merits against their demerits. For it would be unrealistic to construct a model system by combining in a patchwork all that is good in the defective systems. This has long been a failing of educationists, and not the least, namely, the illusory belief that the science of education can ignore social, political and economic realities.

It might also be asked whether our study is of any use. Can it make any fresh contribution? Have not many works published since the beginning of the century dealt with all the causes for education systems functioning badly and at the same time put forward remedies? Has not the International Conference on Education adopted some sixty recommendations drawing attention to the fundamental problems and indicating possible ways of improving the efficiency of education? This may be so, but the magnitude of wastage had never been gauged. It was vaguely realized that wastage existed. However, it was regarded as a normal phenomenon inherent in any education system. It is surprising nevertheless that all the writings of the psychologists and educationists and all the recommendations of international groups have had so little impact. There is evidence here of a break between theory and practice. Why is it so difficult to change the school? We believe that scepticism with regard to opinions and ideas of theorists and the crushing

influence of the history of education suffice to explain these difficulties. In a world in which science and technology are paramount any transformation of the school is expected to be founded on scientifically established facts, not on impressions. This view seems reasonable so long as it is not just an alibi to preserve the *status quo*. Actually, educational research has scarcely touched on the wastage problem. Except in a very few countries, there are not the means to tackle the essential questions; research is often still conducted on a makeshift basis and its field of activity is limited to the improvement of matters of detail. It is also very likely that research lacks interdisciplinary scientific models and continues its course oblivious to economic, social and political facts. Then again, to understand the role of history, one has only to remember that the primary school originated in the 'schools for the poor' or 'charity schools'. In the nineteenth century it was held that 'people of the working class—that class which earns a living by physical effort—very soon need the labour of their children; and the children themselves need to be introduced and above all accustomed early to the hard work which is their lot. They cannot therefore idle for too long in schools. A summary education, complete of its kind, must be given to them in the span of a few years...'.[1]

In short, true education was for the élite. No education minister could uphold such ideas today, of course. Is it absolutely certain though that many educationists—at all levels of education from primary to higher—do not secretly think that the vast majority of pupils do not need a very thorough education, that failure is normal and that the unsuccessful pupils will get their schooling through hard work in the factory or the fields?

With these initial remarks, it remains now to analyse the main internal factors in wastage.

METHODS OF SELECTION

In the 1968-69 survey each Member State was asked for information concerning regulations governing promotion and examinations at the primary and secondary levels. On first study the replies showed great diversity: in contrast with very simple provisions there were often

1. Statement made in 1800 and quoted by Antoine Prost in *L'Enseignement en France de 1800 à 1967*. Paris, Armand Colin, 1968.

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rules so complex that without inside knowledge of the school system it was somewhat difficult to interpret them correctly. On closer examination, however, the data from a large number of countries amount to this:

Promotion

Promotion depends solely on the reports given by the teachers in the course of the year.
Only the results of an end-of-the-year examination are taken into account.
The results obtained during the year and those obtained at an examination are combined in proportions which vary from one country to another.
In some cases examinations are held at the end of each term or semester. In some countries the teacher's reports are considered in conjunction with the results of tests set by inspectors or head teachers, the relative importance of these factors varying from one country to another.
In some cases, too, decisive examinations are held only for certain subjects: for the rest only the teacher's reports count.

Transition from one cycle to another

The teachers' reports alone are taken into account.
The decision depends solely on an examination.
As for promotion, teachers' reports are considered in conjunction with the examination results.
The two last-mentioned provisions given in 'Promotions' also apply here.

In several countries, although there is an examination at the end of a cycle, admission to the following cycle is subject to a second examination.

In the case of both teachers' marks and examination results the regulations usually stipulate a minimum general average and minimum averages for certain subjects—for instance the mother tongue (or language of instruction), mathematics, religion. Some subjects (music, drawing, modelling) are in many cases not taken into account at all. On the other hand, marks allotted for neatness, conduct and application to work may affect promotion or entrance to a further stage in the course.

Summing up, whatever the method used, it all comes down to expressing in numerical form the acquisition of a certain sum of knowledge and devising arithmetical operations to average the results.

What is the connexion between all these calculations and the *learning process?*

Many psychologists state that learning means 'endowing an organism with new functional properties' and changing all the time, that it is a dynamic and not a static process. It is true that the mechanisms of learning are in many respects little known, but nothing in our present state of knowledge justifies dividing the continuous evolution of the individual into relatively arbitrary stages and administering tests during or at the end of these 'stages' of education. What is the aim? To capture a momentary state? To test the capacity to reel off words? Perhaps. But what relation can be established between this verbal performance and enduring knowledge? Can creative ability be measured? Does not any attempt to introduce precise measurement in the course of a learning process presuppose an entirely erroneous conception of the development of intelligence? And even if the testing process were valid, what is the significance of the figure which is supposed to represent the pupil's performance? What is its validity? The dubious character of marks has been demonstrated by many investigators over a period of decades. The mark depends on the person correcting. It varies with time, the same person rarely giving the same mark for the same test a few weeks or even a few days later. The scale adopted is usually subjective, being closely related to the teacher's personality and to his frame of mind.

The compartmentalization of subjects leads to a whole series of measures, as if the pupil's mind could be divided up and scrutinized piecemeal, as if the various skills did not interact. Then again, the competence of the teacher varies from one subject to another, which means that the validity of the marks inevitably differs. Furthermore, some subjects are less amenable than others to this subdivision and to the evaluation of performance. Is it not significant that in many cases no attempt is now made to allot marks for drawing or music or, generally speaking, to measure manual or creative activities?

Suppose for a moment that the ideal corrector exists. The promotion of a pupil is going to depend on his obtaining the pass mark required by the regulations. According to what criterion was that mark fixed? It is anomalous that in two neighbouring countries where cultural conditions are similar the pass marks differ, not to mention the fact that the scales laid down by the central authorities are not comparable. And again, in two countries where the language of instruction is the same, there is a scale of 1-6 on one side of the border and a scale of 1-20 on the other.

The numerous national and international seminars and conferences have shown that there is not a single psychologist or educationist who was not well aware of all this and who did not agree that marks are

questionable. Yet the future of pupils continues to be decided by means of this dubious method. Why then be astonished by the extent of wastage?

This emphasis on figures has still other effects on education systems: the real purpose of education is placed at a remove. It is no longer the development of the individual which is central but above all the ability to learn things measurable. And courses are designed in accordance with this requirement. What was in a sense incidental has become the essential; marks have become an end in themselves. Testing often takes precedence over teaching and constitutes a permanent threat to both pupil and teacher. Anyone who has been involved in the life of a school at the end of the academic year knows the strain experienced by administrators, teachers and pupils with the final examinations and their correction, the calculation of averages, the making out of yearly reports and the meetings of the teachers who will have to apply the regulations. The school becomes a counting-house. And although everyone knows that marks are relative, they have become sacred. A mark once set down in the school records cannot be changed. Any teacher suggesting such a course would incur the disapproval of his colleagues and superiors. Similarly, the discussion of border-line cases—in schools which do not apply the regulations to the letter—leads to tragi-comic debates. On what authority can a pupil whose average fails to reach the requisite standard by one-tenth of a mark be promoted? A tragic question because someone's future is at stake, but comic when it is realized that the margin of error for any one of the results totalled to obtain the average is far greater than one-tenth of a mark.

Examinations

All that has been said above concerning marks applies to the marking of written or oral examinations. However, it should be emphasized that, owing to the circumstances, the results are of even more doubtful value. Correctors have but limited time at their disposal and oral examinations are tightly scheduled. The strain imposed on teachers, pupils and parents is so unbearable that many psychiatrists have pointed out its harmful effects on mental health. The tension which reigns is not conducive to an objective appraisal of pupils' performance. In fact we fall prey to arbitrary methods, as many studies have clearly shown. In written tests the choice of questions is left entirely to chance. The corrector's evaluation of the pupil's work is affected as much by its appearance, by the handwriting, as by the content. The anonymity which is sometimes supported on the grounds that it ensures fair treatment leads to an

appalling disregard for the individual, who becomes a mere number. Many factors affect oral examinations too: the examiner's tone of voice, his calm or irritable manner, his way of putting the questions, suggesting the answers, a desire to make a good impression on the specialists. The candidate's personality is also a decisive factor: the speed of his reactions, his shrewdness in perceiving the examiner's intentions, his mental blocks. The mere fact that the candidate often has to draw a question by lot shows that there is indeed a lottery. All this is known and yet reliance is placed on these dubious methods to decide the future of whole generations of children or young people. Is it surprising that they rebel?

Exceptionable as marks may be, what is even more open to question in our view is the very nature of examinations: are they not an unmitigated form of blind selection? An artificial situation is contrived: on a day and at a time fixed in advance the pupil must reproduce certain items of knowledge. Of course it is said that the fund of knowledge does not really matter, what is being measured is the capacity for thought. This is often a gratuitous assumption: one has only to peruse a few hundred questions to see that the result of an examination is decided by what has been learned. The pupil has at least a faint idea that he should imitate his teachers to succeed, reproduce what has been taught rather than show originality. Obviously there are differences between examinations at the primary level and those at the secondary level. In the case of the former the child merely reproduces material which has been learned but only partially assimilated. At the secondary level reactions are more subtle; there is some attempt to say or write what will make a good impression. Of little import is the formative rôle of education: it is enough to be able to calculate, combine, imitate and be self-confident. The emotional, the stumbling, the hesitant, those who express themselves badly, are always in danger of being eliminated whatever their abilities.

To sum up, examinations establish in the individual a state of mind, behaviour and habits which are the negation of what the official texts claim to be the aims of education. In addition, teachers and parents constantly brandish them as a threat to stimulate the pupil: a state of fear is established which is in itself a factor in wastage. What relationship is there, moreover, between examinations and the exercise of an occupation?

THE REGULATIONS

Some comments have already been made, in passing, on promotion or examination regulations, but it is well to come back on the subject here.

What are their functions? On the one hand, they set a standard which all teachers must apply. On the other, for the parents they represent a contract in a way of speaking: if your child obtains such and such results he will be promoted or he will be entitled to such and such a certificate. For the teachers they serve as a buffer between them and the parents. For the latter they also guarantee that the system will function fairly. In theory a teacher does not make any decision as to a pupil's future; he applies the legal provisions. The parents, for their part, even if they are not satisfied, cannot react unless the regulations have not been observed. It is readily understandable that an education system cannot function without a minimum of regulations. What is debatable is the framing of texts which lead to transference of the aims of education: the important thing is no longer to be educated or to learn how to learn but to fulfil the conditions laid down in the education act. Indeed most of the provisions concerning promotion or examinations are arbitrary; they are rarely based on scientific research. However, with the vast quantity of research findings now accumulated in the archives of schools and ministries it would be easy to test the validity of the standards set and to investigate their rôle in wastage. When wastage affects 50-60 per cent or more of the school population—as is very frequently the case according to the 1969 survey—no country can maintain that the regulations are adequate, that these pupils are dunces. It may even be questioned whether this state of affairs does not endanger the national economy and whether the passive attitude of the parents will go on for ever. Neither those responsible for the national economy nor the adult population as a whole ever look into the value and meaning of the regulations. They no doubt regard them as inescapable, which partly explains why so few educational administrators question them. As things are, only a new awareness on the part of parents could bring about any change. Unfortunately, the parents themselves have been conditioned by the education system. It even happens that when the school is inclined to innovate, the parents resist, not understanding why what was good for them will not do for their children.

THE VICTIMS OF THE SYSTEM

The daily press, and the specialized education journals, often refer to the qualities which will be required in the year 1990 or 2000. People will have to be capable of adjusting to circumstances which today are unforeseeable. They will change their occupations more than once and will have

to display initiative in every walk of life. What will count will be creative ability, innovating behaviour, fearlessness, courage, perseverance. As we do not know what knowledge will be useful in 20 or 30 years' time, emphasis is laid on the importance of working methods, the ability to examine critically, select and use to advantage all the information supplied by the communication media. Yet, strange as it may seem, the school refuses to envisage this future. The subordination of the pupil to the marking system engenders in him a series of mechanisms which impede the development of his reasoning powers and his reactions. Marks make the pupil concentrate on results, which he must obtain at any price: dodges, guesswork, cheating, any means will do. Little value is set on the pupil's reasoning, the way he went about answering a question. This develops habits which are in contradiction with all educational ideals. Paralysed by the fear of being unable to supply the right answer, the pupil rushes ahead and makes any reply that comes to him. If he is lucky, so much the better! When a pupil's work is being appraised, the mistakes are counted but what is correct is not taken into account. With this method the pupil can only lose marks. All assessments are centred on failure. The teacher discourages the pupil instead of noting the efforts made to overcome a difficulty. As for the ability to create, to invent, this plays an insignificant rôle. To succeed, it is better to conform to prevailing standards. It might be added that the fact of having so frequently to give marks leads teachers to think up veritable traps for the unwary. Take, for instance, the well known spelling tests in which pitfalls are cunningly devised, the mathematical problems with unreal situations which defy common sense.

Although some parents—usually members of the liberal professions —criticize the selection system, it is accepted by the greater part of the population. What is more, the parents let themselves become involved, rewarding the child for good marks, punishing him for bad ones. They will repeat with satisfaction that one child is top of his class, that another did brilliantly at an examination. On the other hand, one who fails is said to be not very bright. No one stops to think that these pronouncements are arbitrary: after all life itself is a process of selection. The press, too, chimes in, giving prominence to the so-called brilliant pupils. Under the influence of teachers and parents, pupils can but adhere to the prevailing standards. They are caught up in a pitiless process which is one of the mechanisms by which a child is integrated into a virtually immobile society. Many of the pupils who succeed go over to the system; they believe in their 'abilities' and find it normal that others fail. Wastage does not disturb them. Does not the public react in the same way?

EDUCATIONAL GUIDANCE: REMEDY OR PALLIATIVE?

The arbitrary aspect of selection based on the usual methods has been realized to some extent. So the educational authorities, to remedy the situation, have set up educational and vocational guidance services, medico-pedagogical services or educational psychology services. The function of the guidance services is to determine what type of school a pupil should attend and, incidentally, what kind of occupation would be most in keeping with his possibilities. The medico-pedagogical services look after children who are physically or mentally retarded and pupils temporarily disturbed by relation or educational problems. The functions of both these types of service are fulfilled by the educational psychology services. While the latter are usually situated within the school, the other services are attached, more or less closely according to the country, to a school or a group of schools. In some cases educational and vocational guidance comes under the ministry responsible for labour, industry or economic affairs. On examining more closely the functioning of these various services, on reading the literature, one finally wonders whether the school, incapable of controlling the situation, which it largely creates, does not depend on these specialized bodies to some extent to readjust the child to the educational system responsible for his maladjustment. Is it possible for a psychologist in a guidance service to advise pupils solely on the basis of his own findings? Does he not as a matter of course advise pupils not so much in accordance with the latter's possibilities as with the realities of the educational system with all its shortcomings, of which he is aware? He cannot be blamed for this, but what then is the use of invoking his competence? In the last analysis, are not the criteria for guidance worth no more and no less than the school's criteria for selection?

Let there be no misunderstanding: it is known that the psychologist is in possession of techniques which can reveal in the pupil possibilities, or hidden defects, unknown to the school. The difficulty in the psychologist's work, or rather the reason for its ineffectiveness, is chiefly that he rarely has the means and authority required for the school to take his findings into account. The old distrust of the education authorities and teachers has not yet been dispelled. Furthermore, many psychologists, although well trained in the use of their methods, know little or nothing about the realities of education. One has only to consult the curricula for university courses in a number of industrialized countries to realize that little attention is paid to the school and the different forms of learning. Then again, the various psychological services are rarely an integral

part of the school; they are more often set apart, which makes collaboration between them and the teachers even more difficult.

Last of all, the question might be asked: just how far have the tests been designed independently of the customary requirements, good or bad, of the school? Of course, and it must be stressed, these tests are always standardized and do not have the subjective, arbitrary character of school tests. In this sense considerable progress has been made, but the fact remains that the constructors of a test have in many cases merely answered the following question: given the objectives and content of the education system, how can a pupil's scholastic performance be most accurately predicted? For this reason educational guidance, as it is understood at present, is a palliative rather than a remedy.

SOME REMEDIES

The methods of evaluation and promotion reviewed above represent one aspect of the faulty functioning of an education system. Is it possible to have any effect on this factor in isolation? We are convinced that a fundamental change in these methods is not possible unless the whole system is renovated: curricula, methods and evaluation are closely interdependent. When reviewing practical remedies applied by a number of countries, it must be borne in mind that improvements were usually made in the sytem as a whole: measures concerning methods of evaluation and selection were just one element.

Several education ministries consider that their school policy demands the maintenance of a system of marking governed by promotion and examination regulations.

It is not for us to judge such decisions. However, there is room for improvement within this framework. Of major importance is to substitute teaching by success for teaching by failure. This renovation will first take the form of a change in the teacher's attitude to class work: instead of counting mistakes he will lay stress on what is correct. Much research by psychologists has shown that a pupil's performance is improved if his correct answers are appreciated and what little progress he makes is taken into consideration. The negative judgements—lazy, inattentive, untidy, stupid—which are always directed at the same pupils are partly responsible for wastage. The child's personality is involved and his feelings are hurt for a few mistakes in spelling or arithmetic or a lesson not learned. It is firmly believed that the only real stimulus consists of threats, reprimands and punishments. Such remarks may be commonplace;

it has all been said long ago by Claparède, Dewey, Makarenko and many others, but unfortunately the situation has remained unchanged in too many classes, often with the approval of parents.

Great importance can be attached to the performance of a group of pupils, even a whole class, instead of individuals. This affords an opportunity of stimulating each child's sense of mutual responsibility. Experiments of this kind have led to pupils deciding themselves as to the appraisal of work and, in some cases, arriving at a system of self-evaluation. It is natural, however, for administrators to be anxious to compare classes, to have an overall view: standardized tests meet this need. If they are used in a large number of classes in the same academic year, comparisons can be drawn giving teachers an idea of the relative progress of their classes, enabling them to discover strong and weak points and to organize their teaching in such a way as to fill in any gaps. It must not be forgotten, however, that if one wants to convert the results of a standardized test into the usual school marks, there are no statistical criteria. The scale of marks is arbitrary: it is decided, for example, that 50, 60 or 70 per cent of the pupils will obtain a mark equal to or higher than the average. This of course is a policy decision and has nothing to do with the science of education. It should also be borne in mind that, if such tests are applied to pupils at a particular stage in the secondary course, the population is no longer normal in the statistical sense. One tends to forget that it is already selected.

In several countries where admission to the next cycle in the course is decided by an examination, the use of standardized tests administered to the whole school population of the year concerned, and not just to the pupils who apply for admission to the next stage, has been found successful. This does away with the arbitrary choice of questions and the subjective judgements of teachers or specialists. However, the strain imposed by the examination remains, with all its consequences. It will be objected that such methods give rise to difficult organizational and correction problems. These difficulties can be largely obviated by the use of multiple-choice questions, which lend themselves to rapid mechanical processing. It is true that apparently expensive equipment is required, but the expenditure is insignificant compared with the financial loss incurred through wastage. The introduction of some system of co-operation between States would undoubtedly reduce costs to the essential minimum.

The transformations described above are not feasible unless teachers receive adequate training. This subject will be taken up again later on.

More radical improvements

In the foregoing, improvements have been reviewed which do not substantially alter the traditional system of promotion and examinations. There are, however, more radical measures which affect the whole system.

It is worth mentioning an experiment in dispensing with marks which was carried out in Belgium during the 1969/70 school year in a score of secondary schools each having about 600 pupils in the first cycle. Actually, the abolition of marks was the outcome of a series of internal transformations. First, an attempt was made to change administrator-teacher relations, on the one hand, and pupil-teacher relations, on the other, by means of group dynamics seminars. At the same time—as it was still necessary to measure the amount of knowledge acquired by pupils and their intellectual progress—provision was made for two kinds of test: 'retention' tests and examinations specially designed to reveal pupils' ability to apply data and their creative ability. Opinions were given on both kinds of test, but no marks. School psychologists and teachers met periodically in the class council, which looked into the position of each pupil and discussed his progress or his difficulties. A few weeks after the start of the academic year each pupil was allotted to one of the teachers of the class, who became his tutor. A teacher was responsible in this way for no more than four or five children. He tried, outside school hours, to guide and advise them and made arrangements for any catching up which might be necessary. To compensate him for this activity, his hours of teaching were reduced. It was the class council which decided on promotion, based on the pupil's progress during the year, the information supplied by the psychologist and the opinion of the tutor-teacher.

The success of an experiment of this kind therefore depends largely on the attitude of the teachers, on their new approach to teacher-pupil relations, on their sense of responsibility. The traditional function of the educator is brought into question: he is no longer protected by regulations; he has become a guide at the disposal of his pupils. Is a renovation of this kind possible at the primary level? For the time being this question cannot be answered. The most one could say is that it would demand teamwork on the part of the teachers working in the same building and the collaboration of an adequate school psychology service.

'Automatic promotion' was introduced in the English-speaking countries some years ago. Actually the concept of promotion was radically changed and, along with it, the approach to teaching. This free passage from one class to the next means that classes are homogeneous.

However, the difficulties which a pupil experiences in certain subjects persist—unless it is a question of mental blocks due to temporary emotional disturbances—and they may even be aggravated in the course of time.

A whole series of measures must therefore be taken to cope with this new situation: catching-up courses must be organized, pupils must be allowed to advance at their own pace, motivations must be found to serve as an effectual substitute for the threat of non-promotion. Courses must be individualized instead of being the same for all, which inevitably entails changes in curricula and methods. Then again, automatic promotion almost invariably leads to the disappearance of 'classes' in the accepted sense and to the introduction of teaching by groups. This means that for each subject the pupils might be divided into four groups, A, B, C and D. Thus pupils of the same age and, theoretically, in the same grade may take the A syllabus in one subject, C in another and B in yet another. According to their progress they may change from one syllabus to another. It will readily be understood that such a system, which does away with the usual selection criteria, demands an entirely new approach to teaching. This important question will be discussed later. It is enough to stress the fact that the disappearance of the idea of failure with all its traumatic consequences is already a long step forward. It might be asked, however, what happens when pupils accustomed to these methods leave school and have to fit into a society where competition and rivalries of all kinds play a determining rôle. Are they going to enter into conflict with the traditional selection of working life?

Finally, it might be mentioned that the transformations which have just been described are often accompanied by a still more radical measure: the abolition of examinations right throughout the school course in both primary and secondary levels.

Intelligence, curricula and methods

To change the regulations governing promotion or examinations is relatively easy, but what is the real significance of such a measure? Let us take an example: if the regulations provide that a pupil shall be promoted if his overall average is equal to or higher than 4 (in a 1-6 scale, 6 being the highest mark), it may be decided to change this in order to reduce the number of failures, but the pupils who get through as a result of this decision will be no further advanced unless something is done at the same time about the content and the form of education. A similar remark was made earlier in connexion with automatic promotion.

Attention should now be turned to what actually happens in the school and to ask first of all what is the *conception of intelligence* on which traditional instruction rests.

A preliminary remark is called for: when, in the nineteenth century, several industrialized countries introduced compulsory primary education, they took as models more often than not the various types of private school, most of which were run by religious bodies. The institution of secular education did not bring in its wake any great innovation as regards curriculum and methods. It is significant that the vocabulary used to describe the child's intellectual work has largely retained a moral connotation! The extension of education to all countries over recent decades has not led to any important changes. It should be noted, however, that the United States and the USSR, for fundamentally different historical reasons, have set up education systems to which the foregoing comments are largely inapplicable.

Furthermore, all school education is based on a certain conception of child psychology which is rarely stated in explicit terms. One has to interpret the official documents to discover it, or rather to have a relatively coherent idea of it, for contradictions are not lacking. In fact the way in which a child shall acquire knowledge is decided beforehand. Deliberate use is made of the word 'shall', and not 'can', because that is the situation. The regulations speak for themselves: 'In order to be promoted, pupils shall...' and then follows an enumeration of requirements relating to the acquisition of many diverse pieces of knowledge. Did the authors of these legal provisions ever inquire into the nature of the processes by which knowledge is acquired? What is the scientific basis for all the constraints embodied in regulations, curricula and methods? In most cases there is none to be found. Whenever the administrators are asked to make some innovation, the answer is: 'We cannot take any risks. We must adhere to well tried practices...' (i.e., traditional practices, even if it is known that they lead to high wastage rates).

However, let us return to the child's mind. It is firmly believed that the latter is virgin ground into which must be implanted a number of forms of adult behaviour. This negative view of the child applies not only to the intellect, but to the whole personality. Seen from this angle, the object of education is to shape the child in our image and to construct brick by brick an intelligence similar to our own. In the minds of the pupils, regarded as little men and women, we try to piece together our knowledge, predigested in the curricula. 'If you want to grow up, eat up your dinner and learn your multiplication tables', children are still

told every day. Yet the facts are not so simple: it is not so easy to cram knowledge into a pupil's head; knowledge is not stored as naturally as is claimed by the theorists. Pupils resist traditional teaching, thus proving that they exist in their own right and demonstrating the absurdity of a teaching system that negates their existence. If the system of constraints carefully engineered to wear down pupils' resistance did not exist they would have abandoned school long since. Does this not partially explain the number of drop-outs after the age of compulsory attendance? Protest is silenced by force, but at the cost of considerable wastage. Education does not take into account the child as he really is. Almost four centuries ago Montaigne wrote in *The Essayes*, Book I, XXVI:

> "Some never cease brawling in their schollers ears (as if they were still pouring in a tonell) to follow their booke, yet is their charge nothing else but to repeat what hath beene told them before. I would have a tutor to correct this part, and that at first entrance, according to the capacitie of the wit he hath in hand, he should begin to make shew of it, making him to have a smacke of all things, and how to choose and distinguish them, without help of others, sometimes opening him the way, other times leaving him to open it by himselfe."[1]

That was four hundred years ago and nothing, or practically nothing, has changed. Encyclopaedic learning, and consequently memorization, is the very essence of education from primary school to university.

The school perpetuates a certain epistemological conception of the nature of the knowledge to be imparted. The development of knowledge in both the individual and the human species is regarded as a linear process involving the successive adding of a series of pieces of knowledge which, taken together, represent culture. The term 'linear process' is used here because the new acquisitions represent an advance in knowledge without ever throwing any new light on what went before. All knowledge thus assumes an absolute character. In the course of human evolution one truth takes the place of another and it is the same for the child as his education proceeds. These truths do not, however, lose their absolute character for all that. It is not part of the logic of the system to give them relativity. Culture is established once and for all.

The consequences of this state of affairs for education are clear. First of all, when it comes to determining the content, stress is laid chiefly on facts and what cannot be contested. By attaching undue importance to facts, we systematically avoid any real attempt at interpreting them,

1. Translated by John Florio, 1603.

at reaching a genuine understanding of a process and not just its result. At the same time we evade the whole problem of interdisciplinarity: the facts in themselves belong to different disciplines and there is nothing to connect them. So curricula are designed with a discrete series of subjects, each of which is subdivided into a series of separate chapters, like so many entries in an encyclopaedia. The most usual methods are accordingly characterized by constant recourse to verbal expression and memorization. It is now thirty-five years since Jean Piaget, a former director of the International Bureau of Education, wrote in volume XV of the *Encyclopédie française* (15.26.11):

> "The almost exclusive use that traditional education makes of language in order to act upon the pupil implies that the child elaborates its concepts in the same way as we do, and that a term-for-term correspondence is thus established between the ideas of the teacher and those of the pupil. In fact, however, the existence of verbalism, that dismal scholastic fact — a proliferation of pseudo-ideas loosely hooked on to a string of words lacking all real meaning — is fairly conclusive proof that the workings of this mechanism are not without their snags, and explains one of the fundamental reasons for the active school's reaction against the receptive school.
> The matter is not a hard one to understand. Adult concepts, codified in intellectual language and handled by professionals in the field of oral exposition and debate, constitute mental instruments whose essential uses are, on the one hand to put knowledge already acquired into systematic form, and on the other to facilitate communication and mental exchange between individuals. In the child, however, practical intelligence still largely predominates over gnostic intelligence; research precedes collated knowledge; and above all, the effort of thought remains for a long while incommunicable, and therefore less socialized, than with us ..."[1]

Weighed down by the use of incomprehensible words, formulae and ideas, the child has only one means of complying: namely, learning by heart. Note that the teacher frequently demands this and a printed formula for the purpose is often encountered at the top of certain pages of textbooks currently in use. Has anyone ever made a collection of the texts a child learns by heart during the first five or six years of school? How much of this stays? What is the significance of these efforts in the education of an individual?

1. Translated in: Piaget, Jean. *Science of education and the psychology of the child.* Translated from the French by Derek Coltman. New York, Orion Press, 1970. p. 164-5.

In the face of the present situation we should ask ourselves how it is that, over these past three decades in the course of which science and technology have developed in such a remarkable fashion, so little appears to have changed in the schools. Yet child and adolescent psychology have indubitably made progress, as has also the sociology of education. Even if all the problems raised by education in this connexion have not yet been solved, we know enough already to make some fundamental changes.

It would not be possible to review all these contributions in the few pages at our disposal, so we shall merely draw attention to the important findings made by one of the foremost schools in modern psychology, that of Jean Piaget. In the latter's work *Psychologie et pédagogie* will be found the guiding ideas for a renovation of education. What has he to say about intelligence?

> "... the essential fact that contradicts these survivals of associationist empiricism, the establishing of which has revolutionized our concepts of intelligence, is that knowledge is derived from action, not in the sense of simple associative responses, but in the much deeper sense of the assimilation of reality into the necessary and general co-ordinations of action. To know an object is to act upon it and to transform it, in order to grasp the mechanisms of that transformation as they function in connexion with the transformative actions themselves. To know is therefore to assimilate reality into structures of transformation, and these are the structures that intelligence constructs as a direct extension of our action.
>
> The fact that intelligence derives from action ... leads up to this fundamental consequence: even in its higher manifestations, when it can only make further progress by using the instruments of thought, intelligence still consists in executing and co-ordinating actions, though in an interiorized and reflexive form... It follows from this that intelligence, at all levels, is an assimilation of the datum into structures of transformations, from the structures of elementary actions to the higher operational structures, and that these structurations consist in an organization of reality, whether in act or thought, and not in *simply making a copy of it.*"[1]

There was nothing new in bringing out the part played by the pupil; what Jean Piaget contributed was above all the wide range of experimental evidence on which he based his assertions. Why then is the rôle of the pupil ignored by the school, except in the case of education for children

1. op. cit. p. 28-9.

between the ages of 4 and 7? Teachers and administrators are at one in maintaining that *the curriculum does not allow this*, for it takes too long. Has not the time come to cut down curricula, to ask, on the basis of the aims assigned to education, what is really *educational?* Of course there are the basic skills—reading, writing and arithmetic. Typically, *speaking* and *seeing* are not included in an age when ability to express oneself and defend one's ideas play such a big part and when illustrations take up more space than texts. It is important that schools should give a prominent place to the spoken language from the outset and allow enough time for developing a critical approach to the pictures which the child finds on all sides.

These basic skills should grow from the child's environment and everyday life. Nonetheless, it is a striking fact that, in many countries, reading lessons are constructed with words which the child does not understand, which mean nothing to him. A perusal of recent readers to be found in the library of the International Bureau of Education brings this fact out clearly. Furthermore it is essential that the child should be brought to understand numbers and master the elementary operations through manipulating objects. Costly equipment is unnecessary. The simplest objects at the pupil's disposal suffice provided that the teacher is able to suggest or devise activities which prepare the child and lead him to discover the basic concepts. The time devoted to such activities in the early years often seems wasted. Actually time is saved later on, since it will no longer be necessary to go over and over again basic knowledge not been properly assimilated. Another important advantage is that there is no longer any risk of discouraging the majority of the pupils.

Learning to read is all very well. The pupil must, however, be given an opportunity to read books which interest him: we learn to write by writing, not exercises in grammar, but compositions relating to everyday life, describing actual experience, and varying in length according to the age of the pupil. School life should continually draw on everything that affects the child and not remain aloof from his actual experience. It is curious that arithmetical problems do not deal with what is constantly discussed in the home: the cost of staple foods, rentals, trends in wages, crop yields, market prices. Where does one learn to calculate taxes, social insurance contributions and benefits?

Once the basic skills are acquired, the important thing is to develop working methods:

ability to observe
ability to find information

ability to innovate
ability to analyse
ability to criticize

that is, know-how and not just knowledge. Curiosity and the capacity to investigate, experiment and invent must be aroused and maintained.

At the primary level, encyclopaedic learning runs rife, particularly in three subjects—geography, history and the introduction to the natural sciences. What is the point of the conglomeration of subjects found at this level in all school curricula? What is to be gained by the memorization of difficult names of historic figures, of places or of recondite terms? Why not centre the course on the study of the environment in accordance with the ideas proposed by Robert Dottrens?

The child would discover that school subjects relate to everyday life, that they enable him to find out and understand what is going on around him. In this way new life would be given to subjects which are often boring; the teaching of the mother tongue and elementary mathematics would be broadened in scope; and there would be no more arbitrary splitting up of the curriculum.

The foregoing remarks largely apply to secondary education too. Is it not at this level that working methods should be learned? Actually, the Western European tradition, which has been followed by many developing countries, has led to over-emphasis of encyclopaedic learning. Culture assumes the appearance of a hotchpotch and it may well be asked whether the curricula do not educate pupils to be content with a smattering of knowledge. What type of pupil can endure this accumulation of subjects, this obligation to reach an acceptable standard in subjects to which he is by nature indifferent? Who can blame pupils for trying to get by with the minimum effort required to avoid trouble? Only pupils who have an advantage by reason of their environment manage to hold out. The others drop out and it is after the age of compulsory attendance that the drop-out rate soars in the industrialized countries. Let us be frank: no one is interested in everything and no one has universal aptitudes; we dislike subjects for which we have no natural inclination. Who would willingly apply himself to what he naturally dislikes when there are so many other things to do? We would work much more happily and intensively if we could give up those subjects which are indifferent to us and devote ourselves entirely to those which interest us. It would also be possible to have curricula more in keeping with our interests. One has only to question university lecturers. If they teach in arts faculties, what have they retained of the science which they learnt

at secondary school? And the science lecturers, if they have never had an opportunity of practising a foreign language in the course of a visit abroad, are they capable of reading and writing it?

The organization of secondary education in the USSR or the USA should give us food for thought even if traditions worthy of respect prevent us from following such examples too closely. Should the developing countries continue to organize their secondary education in accordance with outdated models?

A study of the curricula leads of course to a complete change in *methods*, of which the guiding principle should be obvious: the child's activity should come first and foremost. No more lessons of the type: teacher speaks, pupils listen—or do not listen—then repeat. This naturally presupposes co-operation among the children, most apt, as Jean Piaget writes, 'to encourage real exchange of thought and discussion, which is to say, all the forms of behaviour capable of developing the critical attitude of mind, objectivity, and discursive reflection. From the moral point of view it results in a real exercise of the principles of behaviour, and not solely in a submission to external constraint'.[1]

A champion of methods based on an understanding of the real development of the child's intelligence and his whole personality, Piaget supplies an answer to the problem of the teacher's authority. He debunks the sort of constraint inherent in the traditional school while demonstrating the possibility of a form of relationship which ranks higher in the scale. 'Needless to say, except in certain extreme cases, the tendency of the new methods of education is not to eliminate the social action of the teacher, but rather to achieve a reconciliation between respect for the adult and co-operation among the children and, as far as possible, to reduce the constraint exercised by the former in order to transform it into a higher form of co-operation.'[2]

Textbooks pose two rather contradictory problems. On the one hand, the developing countries complain that their textbooks are inadequate and that, for lack of *resources*, they are unable either to renew them frequently or to adapt them to local conditions; on the other, in the industrialized countries it is increasingly felt that textbooks ossify education, or rather that they are an obstacle to the changing of methods and the updating of knowledge. A recent survey on history books revealed that each page contains on the average twelve proper names which pupils must memorize or ignore. In the course of another survey, still under way,

1. and 2. op. cit. p. 180.

on physics books, some thirty definitions of new terms were found compressed into five pages. It should be noted that these were recent works. On scanning readers used in French-speaking African countries we saw many words, common in Europe, which a child of six would not know. Similarly, in arithmetic books for African or Asian countries we encountered the problems involving purchasing price and selling price and the calculation of profit and loss which encumber European textbooks. Books are doubtless an indispensable aid for the teacher, who cannot know everything and improvise a series of lessons; they also represent for education ministries a relative assurance as to the ground covered. However, is it not an easy way out, an encouragement to those who lack initiative to fall back on the verbal approach?

Would it not be possible to design textbooks which suggest various types of activity, different working methods, stimulate the imagination, draw attention to sources of information within the reach of pupils, propose the construction of objects to illustrate a lesson with inexpensive and readily available materials?

Teacher preparation

Everything that has been said so far in this chapter is of direct relevance to pre-service and in-service training for teachers. First of all, it is clear that wastage seems normal to teachers. No doubt they have seen many of their own classmates repeat or drop out. However, all in all, even if they have been shocked now and again by a decision of the education authorities, they think that the system is not too bad, since they have obtained their certificates. On the strength of their success, they readily imagine that they are more gifted than those who fell by the wayside. Furthermore—and here we have mainly in mind the primary school teachers—their training is essentially encyclopaedic in character. The idea is to give them a smattering of everything: to the various branches of general education are added an introduction to psychology and educational psychology and courses in teaching. Frequently they are required to have some measure of ability for drawing, music, handicrafts and physical education. Finally, they are introduced to the practice of teaching in traditional classes—with few exceptions—where the regular teachers are known for their fidelity to the system. It would be astounding, to say the least, if young teachers embarking upon their careers were anxious to innovate.

Philip Coombs, in a work entitled *The world educational crisis—a*

systems analysis[1] looks at the problem of teachers from another angle. According to him, education, in contrast to other industries, is *both* a producer and a consumer of high-level manpower. If it is to serve other consumers of manpower well, and each successive generation better, it must constantly recoup enough of its own best output to generate a good next crop. To recoup enough of its own best quality products, therefore, education must compete with all other users of such manpower. In this competition, education is inescapably at a disadvantage most of the time, and ends up with a high proportion of 'second choice' candidates, because other competitors set the pace for salaries.

It is not possible here to go into this aspect of the problem, which is closely bound up with a country's skilled manpower needs, its available resources and consequently its economic development. A radical change in teacher training would probably lead to an improvement in this situation, although it would be well not to entertain too many illusions for in many countries the social status of the teacher is steadily declining. This slow but sure decline of a profession which is vital for a nation's future calls for the attention of the authorities and should be seriously investigated by means of sociological surveys.

Notwithstanding the administrative measures required to combat wastage (see pages 72-73), only a fundamental renovation of teacher training can break the vicious circle caused by teachers who have been educated under a system which involved repeating and dropping out and who perpetuate that system in their classes. As an indication let us see what a model teacher-training college might be like.

First of all, the minimum amount of essential knowledge might be determined and, consequently, encyclopaedic learning abolished. A teacher cannot learn everything he will need in the time available; more than half of that time should be given over to working methods, seeking documentation and information, becoming acquainted with the material collected and examining it critically. The sources of information should be as diverse as possible: books, slides, films, tape-recordings, radio and television programmes. With government aid, the pupil teacher could build up a personal library which he would take with him to the classroom. Pocket books providing scientific information on a wide range of subjects are now to be found in a number of languages. The expenditure thus incurred seems small indeed when one considers the cost of educational wastage. Environmental studies should have a prominent place:

1. Coombs, Philip. *The world educational crisis — a systems analysis.* New York, Oxford University Press, 1968. 241 p. diagrs., tables, bibl.

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they can be a starting point for field surveys, for becoming acquainted with the economic and social situation of a region, for drafting reports, preparing documents and building models which the student teachers would subsequently use when teaching. In all these activities every opportunity should be taken to stimulate students' inventive and creative powers and the spirit of inquiry.

Secondly, students should be encouraged to co-operate and develop a sense of responsibility rather than to compete. This could be done by dividing them into groups, each with a specific assignment. Authoritarian direction would be replaced by a system of co-operation and participation. Under these circumstances current methods of evaluating performance and results would of course be meaningless and a system of self-evaluation would have to be introduced gradually. Is this Utopian? Experiments with working groups set up on these lines show that our project is feasible provided that care is taken in selecting the teacher educators and preparing them for this new rôle. It is useless to tell teachers over and over again that they should be guides and advisers, stimulating and encouraging their pupils, unless, in the course of their training, they have themselves taken part in a community experiment in an atmosphere which gives them an idea of what the atmosphere of a class should be.

Thirdly, this experience, day after day, would be an effective lesson in educational psychology. The gap which usually exists between what student teachers learn in their courses on psychology and the theory and practice of teaching and what they see around them at the teacher-training college is such that these courses undoubtedly lose much of their value. It is important therefore that theory and practice should not be at variance at the college. Furthermore, an introduction to educational research would replace with advantage many lessons detached from any real situation. Consequently it appears to us that a pilot school should be attached to the teacher-training college. Practical training cannot possibly be given except in *avant-garde* classes. The usual method of placing student teachers in the hands of experienced teachers known for their conservative attitude can only produce more conservative teachers, capable at best of continuing the wastage system.

Finally, when the young graduates take up their duties, it would be desirable for them to be followed up, guided and encouraged by inspectors who inspire their enthusiasm instead of damping it as is frequently the case. It would perhaps be advisable for a psychologist and the lecturers in the theory and practice of education from the teacher-training college to be associated with this follow-up work for the first few years to ensure the maximum continuity between training and practice. Expe-

riment has shown that this is possible if the school administrators understand that the interests of education are more important than their personal prerogatives.

CONCLUSIONS

A further study of all the internal factors will be found in chapter 6. For this reason, only those which were considered to be the most important are dealt with here. For example, the possibilities of audio-visual methods might have been discussed. Although, apart from the fact that these methods often necessitate costly equipment, such educational research as has so far been carried out does not lead us to believe that they will solve the problems as if by miracle, as some imagine. In this connexion it is worth while to quote again from Jean Piaget:

> " In short, the image, the film, and all the audio-visual methods with which any pedagogy anxious to persuade itself of its modernity is perpetually bombarding us at the moment, are precious aids as long as they are thought of as accessories or spiritual crutches, and it is obvious that they represent a clear advance on purely verbal methods of instruction. But there exists a verbalism of the image just as there is a verbalism of the word, and compared with the active methods, the intuitive methods—when they forget the irreducible primacy of spontaneous activity and of personal or autonomous investigation of truth—are merely substituting this more elegant and refined form of verbalism for the traditional kind of verbalism. " [1]

To return to reality, whatever the reforms carried out in the near future, improvement in the rate of wastage will be a slow process. Many children and young people leave school with an incomplete or totally inadequate education. We see no way out of this situation unless adult education is set up as part of the reform of education systems leading to continuing education. In this way people could be helped to fill in some of the gaps due to wastage and the active co-operation of parents could be enlisted in the struggle to prevent the potential of the young from going to waste.

1. op. cit. p. 74

Chapter five

The external factors: problems and remedies

The education system has been separated from the total social and economic context only for the convenience of discussion. Clearly no work bearing on educational effectiveness can afford to pretend that educational systems can be isolated from their context, but it is also apparent that institutionalized education finds it difficult to do more than pay lip-service to the notion. It is easier to conform to the internal representations of the social and economic context than to deal with the external realities. Even the form of the question which asks what factors external to the school contribute to educational wastage pre-supposes that all wastage is recognizable within the system.

Attention has been drawn to wastage which stems from inappropriate adjustment of the total system to its context. The internal environment of the school and its social processes may have become totally foreign, if indeed they were ever indigenously relevant, to the society they serve. Buildings, equipment, books and curricula may be among the obvious misfits, but there are others which are no less important to the image that schools present to their customers: the duration and number of school sessions per day, the number of days per week, the number, length and distribution of terms, the variation of all these with age; the degree of formality of teacher-pupil relationships, the formation and review of institutional rules of behaviour for pupils and staff, the degree of accessibility of school to parents and the members of the community, the participation of the school in the life of the community. To seek far beyond the immediate environment of the school for causes of wastage may bring its own difficulties.

There is an apparent danger in broadening the setting of a problem to such a degree that it becomes impossible to deal with it uniquely. One could for example simply point to the derivation of the factors

contributing directly to wastage from the social and economic limitations of the nation. At which point hopelessness threatens to strangle action. It seems that until the economy of the country is raised to a given threshold and the benefits are widely distributed, little can be done. Similarly the enlightenment of nations giving freedom and respect to the individual and particularly to children, within a secure and socially concerned environment, appears to demand time in which change can take place. It seems to argue that time alone will permit circumstances to become more favourable to the reduction of wastage.

The alternative to waiting for time to put things right is planning. Development plans co-ordinate the utilization of the nation's resources towards predetermined short-term goals which are part of a master plan for total development. It is in the partitioning of current resources that education is most likely to suffer, since it is easier for planners to perceive the instrumentality of technical training in the provision of skilled manpower, than to recognize that general education raises the whole competence of a nation towards versatility of skills and learning. The economic benefits of general education are rarely visible in the short term, yet they are undoubtedly immense over the period of a generation. Even if resources are allocated to increase provision they may not be sufficiently well adjusted to the dynamic processes of society.

We may take the example of former colonial territories, which are frequently at the mercy of their earlier history, as an instance of the complexity of these social forces. As was stated at the International Conference on Education (1970), 'Parents and children still operate in conformity with an out-of-date model which no longer leads to employment, yet refuse technological education as an inadequate substitute'. In the course of colonial rule, participation in administration at the lower levels was encouraged because it was necessary. Preparation to participate involved education. The rewards of participating in terms of security and power were high. Thus education or at least the achievement of a particular educational standard became sought after because it provided, even seemed to guarantee, status. Such standards have long been devalued by over-supply and sometimes by dilution, yet faith in them goes on, since pragmatically there is always an even higher standard that can replace them.

Eventually the point is reached when even the highest academic standard is over-subscribed and brings no commensurate return of status. Disillusionment may set in, public discontent may follow, but always the masses who have not yet had the opportunity for disillusionment press for the education, which provides employment for the disil-

lusioned as teachers. The dynamic of the process persists long after the realities which created it have disappeared, and the system disguises its own inadequacies. The few do succeed, and the more ill-understood the educational goals are, the more the educational process appears a gigantic national lottery in which the prizes are dazzling but few and the only mistake is not to buy a ticket. The more ritualistic and ill-understood the educational procedures, the more resistant to change they are. Such countries possibly require agricultural technicians in large numbers, yet the colleges that prepare them may only be used as stepping stones back to the orthodox system, which alone provides the recognizable route for aspirations.

It does not always happen that orthodox education derived from colonization coincides with indigenous aspirations, however. For example, in Senegal there was a systematic refusal to learn the language of the former colonizers, which is the medium of school instruction, because it was estimated that 90 per cent of the population spoke Arabic and parents feared that their children might become foreign. Children were taken away from school after two or three terms because it was considered alien. Such alienation from the school is by no means restricted to developing countries, however, it can happen among sizeable low income minorities in affluent societies.

RECOGNIZABLE CAUSES

Relative poverty

Poverty is recognizably one of the characteristics most closely associated with drop-out and repetition. However, a distinction must be made between relative and absolute poverty. Absolute dire poverty would bring with it malnutrition, undernourishment, inadequate housing, child labour and all that these in their turn entail. Nevertheless the association between poverty and low-educational achievement holds true for developed and developing countries alike; even when the lowest level of poverty in the former might equal affluence in the latter. Although relative poverty may itself be the product of other variables, it undeniably has an effect in itself. The sense of degradation that arises from knowing that in terms of possessions and purchasing power one is inferior to others is appalling, but it is even less disastrous than that which comes from knowing that one's services are valued by society at the lowest level it permits. The only recourse which enables self-respect to be maintained is to find a place in a community of like people and to create a way

of life and a set of values which are as far as possible independent of society at large. This is achieved by a partial rejection of the values of the rest of society particularly those values which are so remote from direct economic significance as to have little recognizable association with it. They may even be inverted so that status is achieved by bravado in flaunting the rules and conventions of society. Institutionalized conventions are among the most easily recognized and tend to become the focus for antagonism. Schools represent the vested interest of the alien society and in addition stand for that in which one failed oneself and that which threatens to alienate one's children. Thus relative poverty is more serious as a phenomenon than absolute poverty which can co-exist in a subsistence economy with highly positive attitudes towards education.

Relative poverty can create class differences but is often superimposed on a traditional class structure. In either case, there are formal differences between classes which over generations become embedded in child-rearing practices. Language, behaviour, dress, attitudes towards work and leisure, interests and achievement motivation are all affected. All of these may be of vital significance for success in school.

The mother tongue. Language is perhaps of first importance and a distinction must be made between inadequate mastery of the first language and inadequate knowledge of the language which is the medium of instruction, which will be dealt with later. The most universal problem is that of inadequate mastery of the first language, applying as it does to all countries alike. It is characterized by language which is bounded by the environmental context, by the use of simple rather than complex sentence patterns, by limited vocabulary and by fixed, rather than variable, linguistic structuring of meaning. By the time that children reach school the language pattern is so fixed that it is difficult to modify. Attempts in the USA to improve the language characteristics of disadvantaged children have succeeded only in producing limited short-term gains which have been lost as soon as special teaching ceases. The gains tend to have been in the acquisition of specific vocabulary and in the acquisition of particular symptoms of privileged dialects. If it were merely an oral language phenomenon which distinguished one class from another it could be regarded as immaterial to learning. However, the intimate connexion between language and thought argues a greater importance than mere class distinction. Control of formal thinking is mediated almost entirely by language, the function of which is to act as an internal set of actions which signify entire classes of meaning and experience extensive over time. The dependence of language upon environmental

context inhibits the development of this control function of language to such an extent that anticipatory mental manipulations of external events are inhibited. Thus children who begin school with language deprivation of this kind are not merely handicapped with respect to comprehension or expressive language skills but also in their ability to develop and maintain more abstract modes of thought.

Behavioural patterns. The adult behavioural patterns associated with relative poverty also have effects upon the behaviour of the children even if the adult patterns are not directly imitated. The physical environment generally conditions certain aspects of child behaviour also. Associated with relative poverty is the slum condition of the urban areas with high density living and insanitary conditions. The marked distinction between work and leisure which characterizes the adults is transferred to the children. Once work is finished then the adults seek total leisure in the form of indulgent inactive behaviour. Children are left very often to their own devices without supervision and without a disciplined system of values to guide them. Thrown upon a crowded and relatively disorganized environment which is often dilapidated they turn their activities towards destruction and seek systematic codes of action from their peers. Thus gang morals supersede traditional morals and the ethic of the peer group is rigorously respected. In the absence of any clearly marked induction process of adult society the gangs create their own induction process which demands proof of maturity through an act of daring. Naturally that which is to be the proof of acceptability in the society flaunts conventional social practice, in keeping with the adult society's antagonism to the world that has rejected them. Anti-social activities by children are not regarded by the adults as being wrong and the children are more often protected by parents from the public retribution for their misdeeds than made to feel guilty. Indeed guilt is rarely in evidence among such groups. Shame replaces guilt as the penal sanction partly because there is little opportunity to be with oneself in order to internalize social stigma and partly because the society itself codifies its ethic in terms of prohibited practices rather than in terms of personal responsibility to a conscience. Delinquent behaviour is therefore to be understood as behaviour which conforms with the alienated society's practices and attitudes even though it is at variance with laws and codes of common practice in society at large.

Since schools represent an institutionalized form of the alien society to be exploited they are negatively regarded by the children and parents alike and absenteeism, misbehaviour and denigration of academic values

are socially acceptable. To have repeated a grade a number of times may be a mark of distinction which is only bettered by dropping out as early as possible from school. It may seem an extreme set of circumstances but it is all too common among the poor in affluent societies. It must not be thought that all is adverse under such conditions. The social life of a child is very rich, the freedom from adult control permits autonomous activity early and the environment despite its squalor is rich in opportunity. While the contrasts are most marked in affluent societies they occur as frequently in the urban sprawls of developing countries. The problems in Calcutta and New York are not so dissimilar.

Attitudes and interests. Attitudes towards school are closely bound up with the previous discussion. Behavioural difference springs from attitudinal difference. It is worth looking a little more closely however at specific attitudes of parents towards school. The parents' attitude towards school probably had its foundations in their own experiences. In all probability they remember school as a regime which was constraining and as involving practices that they never fully mastered towards ends that they never understood, with benefits that they never attained. For them teachers and schools have not changed. The school is a prison-like building where one sits in rows, listening and being punished, controlled by people from a different, superior neighbourhood who never tried to find out what one thought or wanted to do. As parents they have little hope of the school benefiting their children but regard it as a means of taking children out of their hands at the time of greatest inconvenience. Should they ever visit the school they find themselves unwelcome or condescended to. They find themselves unable to contribute to anything the school is doing and have difficulty in understanding a curriculum which does not resemble that which they followed themselves. They have the greatest scorn for the collaborating group of parents who work with teachers in parent-teacher associations regarding them as ingratiating themselves with authority. Moreover they would like an opportunity as adults to assert their independence from the authority of the school and to insist on their rights whenever the school seeks their permission for out-of-school activities. Attitudes as established as this are difficult to change, no matter how hard the school staff tries to win co-operation.

Interests follow closely upon attitudes. Indeed it might be said that attitudes represent a coherent body of feeling directed towards a particular set of objects, and interests represent the likes and dislikes of individuals for specific activities or involvement in the situations towards which attitude is directed. We can say of an individual, that he has an

interest in something if he demonstrates a liking for it either through some preferential decision in its favour or the substantial investment of voluntary time in it. Interest is characterized by desire to know more and by an inquisitive search for further examples of the focus of interest. In so far as the relative poor display unfavourable attitudes towards education and strong pre-dispositions to anti-institutional behaviour, so their interests follow. It is a commonplace that children will display considerable knowledge of the different makes and models of cars or spend hours over collections of matchboxes and yet show not the slightest interest in the subject matter of the classroom. If interest of this order exists then it is at least something that the school can utilize but among the group we are discussing, consistent interest in anything tends to be lacking. Perfunctory attention to the novel experience is almost the best that can be achieved. Interest quickly shifts to something new; if not a diversion is created which will make it possible. Apathy and restlessness characterize the behaviour of those with low interest levels.

Achievement motivation. This is determined by the expectation of success or failure, by the benefits of success and by the seriousness of the consequences of failure. It appears that basic motivations for achievement are established very early in a child's life and have to do with the degree of autonomy he is permitted and the positive or negative responses that the social environment offers. Even at the age of three years it is possible to distinguish children whose basic orientation is towards success or failure. A failure-oriented child displays a reluctance to engage in competitive tasks; when induced to do so he tends to be tentative and if he succeeds shows a marked desire to do the same again. But if he fails he seeks various ways of distracting from his apparent inadequacy. He may pretend that he actually was successful or he may accuse his competitor of cheating and wish to control the future operations so that he is successful. The success-oriented child is gratified by his success but not unduly so. When he fails, he accepts the situation without comment and remains relatively unperturbed by it. It seems likely that expectation of failure or success is induced by child-rearing practices in which the adult either demonstrates pleasure at success and understanding of failure or unconcern at success and impatience at failure. Some children can never please their parents and some children never know whether their parents are pleased or not. If such achievement motivation is not well established by the time that children reach school, early experiences in school tend to direct or confirm existing tendencies. Among the children of low income groups, the negative attitudes towards school with which they

come are all too readily reinforced by early failure and once having failed it is almost impossible to retrieve the position since avoidance behaviour becomes habitual and there is no longer the incentive to try.

The characteristics of children of low income groups described above are not intended to be either indicators of what is universal among them or of what is typical. It is intended merely to describe those adverse relationships with schools which more commonly exist among the relatively poor and which bring about the contrasts with the privileged. Of course many children of such parents succeed in school and many such parents make enormous sacrifices so that their children shall have educational opportunities but we are concerned with identifying the problems rather than with wondering at the triumph of some people over their adversity.

Religious education and conservatism. Having outlined the characteristics of groups which are either positively or antagonistically oriented towards education it is necessary to speak of the many people whose attitude towards education is neutral, in particular about those large tracts of territory where the population is agrarian or nomadic and for whom schools have no major place and education is on trial. But there may be some traditional form of school linked perhaps with religious teaching which is now either archaic or resistant to change to such an extent that it cannot be utilized by State education. Such schools seek to preserve the language, principles and ritual of religion. The studies centre on ancient literature and tend to encourage memorizing and recall as the prime virtues. Literacy may be less important than handwriting; accurate recall is preferable to reasoning. The teaching lies in the hands of the religious teachers who are themselves preservers of the faith and have had instilled into them the necessity of not departing from the ritualistic practices of the past. It is easy to see why the more modern State education finds it impossible to utilize them.

Religious teaching of the ancient style incorporates much of the knowledge of the world as it was and contains precepts which were once wise but some of which are totally outmoded. Such precepts refer to behaviour which will preserve the proper station in life to which one was born, to avoidance of forbidden foods, to attitudes towards physically handicapped children. Outmoded knowledge is also transmitted in which magical explanations of natural phenomena and legendary deeds of gods in creating the universe are directly at variance with scientific explanation. Above all it offers a philosophy which once enabled people to tolerate a hostile environment. The philosophy may be one of fatalism in which all is pre-ordained or it may be one of unrealistic optimism in which gods

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are placated by ritual acts. This religious teaching has the authority of ancient tradition, is supported by the elders and has a relevance to everyday life through engrained custom. It has a vested interest in its own preservation and indeed in preventing change. The teaching emphasizes indirect control over the environment, if not passivity, and contrasts with the modern education for a technological era. For example, we know that in Nigeria some religious groups were apathetic to western education. Among such groups, school enrolment was low and drop-out was high. In particular, early marriage which disrupted secondary education was encouraged.

Children and society. Traditional religious education nevertheless has some lessons for State education. It has usually adjusted over the course of time to the way of life of the community it serves. It is tolerant of absenteeism, less bound by the clock and more closely integrated with the community. In such communities the State system of education faces the traditional expectation of child labour being available in one form or another from the age of about six years. There are many tasks in the home and in the fields which are light enough for children to perform and which give material benefit to the limited economy of the family. For these families the season of harvest is critical. At this point in the year the crops must be gathered while the weather holds, otherwise the fruits of the previous season's labours are lost and this can mean the difference between starvation and sufficiency. Moreover this labour is not thought of as being mere exploitation of childhood; it is in itself a form of education through which children are inducted in the knowledge and skills which will enable them to farm better in the future.

In communities of this kind, children are valued not only for themselves but also as potential assets. They are a prospective labour force even though they are extra mouths to feed. Childhood is short, however; as soon as possible the infant is induced to help in the home, in the market or in the fields. The world of the adult dominates the home and children have a strictly subordinate place. They must be silent in the presence of adults, show great deference and not play too much. Play is regarded as indulgence and laziness. Imitative play which has the appearance of skill learning is preferred to imaginative play and traditional games, songs and dances are preferred to spontaneous high spirits. Inquisitiveness is subdued, exploration and experiment discouraged.

Such attitudes are transferred to the school where, despite their training, teachers find themselves preserving the subservient rôle of children. The community expects that they will. Modern modes of

teaching, employing child-centred concepts, encouraging spontaneous behaviour, liberalizing relationships between adults and children are in marked contradiction. It is almost as difficult to introduce children to free activity as it is to deal with the suspiciousness of the parents.

Changing societies. Into this society, change comes in cataclysmic form. Political ideas spread among youth, revolution and war tear the traditional life apart, exploitation of mineral wealth breaks up the landscape, modern transport thunders through the villages and shrieks overhead. Perhaps the most disruptive force is the political recalcitrance of youth in that it undermines the perpetuation of the society. At the Conference concern was expressed over the involvement of students in political affairs before they were sufficiently mature. They were imitated in their absenteeism from studies and destruction of school property by children as young as nine or ten years of age. Social forces, similar to those that have struck affluent societies in various parts of the world are at work. The failure of the older generation to transmit values that can command respect is partly to blame. But whatever the causes, one of the reiterated complaints of youth is that the older generation is hypocritical and is dictatorial in witholding a share in its authority. There is a demand for greater participation in decision making and administration, particularly within the sphere of education.

The uneducated parent. A major contributing variable to the isolation of the school from the community is lack of education of the parents. Where parents have not themselves been to school or, despite having been in school, remain illiterate and innumerate there is no basis on which the school can anticipate any understanding of its aims or activities. The lack of parental support and understanding of what he is doing places the child in two segregated worlds between which he must choose at certain critical points. The need to take care of younger siblings or to help in planting out young seedlings conflicts with attendance at school. If one has never been to school oneself it is difficult to understand why continuity in attendance should be important. Why should learning not be like other work which has its critical times for intense industry but other occasions when sporadic attention is sufficient? Why should children enjoy themselves at school? Should they not obviously labour while they are there? If they are not tired when they return, was not the time at school being wasted? Equally difficult to understand, is the range of the curriculum. To learn about distant lands, about what lies under a sea one has never seen, to express oneself in painting and music seems

far removed from anything that will be relevant to the child's life in the future. It is not that the parents are antagonistic but simply that they fail to understand in what way most of what the children do will be of benefit to them.

Absolute poverty

The conditions surrounding absolute, dire poverty have been left until now since they are not directly bound up with particular attitudes towards education but may be coincident with any or all of them. Absolute poverty exists in societies where labour is directed towards the basic satisfaction of the means of survival.

It can occur in subsistence-level farming or among unskilled labour in large towns. The main human factors associated with it are hard living, undernourishment, malnutrition, disease, fatigue and lack of recreation.

Hard living. This usually entails sub-standard housing which fails to keep out the weather, is unsanitary and lacks main services. Such homes are usually overcrowded, one-room living for a family being very common. All the activities of life go on in the same space. There is no privacy and not even an opportunity for the activities of one person not to affect those of the others. The absence of running water usually entails carrying water over long distances and often leads to uncleanliness. The absence of fuel means that the most primitive forms of producing heat must be used, implying the gathering of wood and smoke-laden atmospheres. The absence of power for light means that the hours of daylight define what may be done and crude oil burning lamps provide light enough only to strain one's eyes.

Under these conditions disease flourishes and is aided by inadequate sustenance. The available food is distributed either in accordance with custom or in terms of greatest need, i.e., the greater share to those who produce the food. A usual practice is for the bread winner to share the most nourishing part of the meal with his wife and for the children to fight over the scraps. Malnutrition may arise from other factors including the ignorance of the parents. Breast feeding of infants tends to continue until the next child is born even when the mother is producing inadequate milk. Though even this can be more sustaining than what may follow. In many societies after being weaned suddenly,

the child is placed on a carbohydrate and contaminated water diet which leads to protein deficiency and dysentery. Thus by the time he reaches school if he has survived the health hazards, he is in a weakened condition, inclined to be inert and passive and having difficulty in attending. Those areas of the world where dire poverty prevails are also subject to serious endemic disease which is difficult to avoid. Malaria, bilharzia, cholera, typhoid fever, worms and eye infections leading to blindness are extremely common. The more insanitary the living conditions and the greater the fatigue involved in maintaining conditions for survival the more likely it is that one or a combination of such diseases will strike. It should be stressed that ignorance about nutrition and the causes of disease contributes as much as hard living to ill-health.

Family disunity

It does not require poverty to create unfavourable family conditions but it is conducive to them. Apart from the physical circumstances the emotional security provided by the home is a decisive factor in safeguarding the child from risk of educational failure. Division of families is extensively associated both with educational problems and behaviour disturbance. Such division of families can occur in many ways; through the abandoning of the family by either parent, through the enforced absence of the father at work in a distant place or through death of either parent. It can occur in less obvious forms in polygamous families where the wife is replaced in favour and becomes totally responsible for the livelihood of herself and her children. Such division of families has its most serious impact when it occurs early in a child's life. Separation from the mother during illness or at the time of her giving birth to the next child has frequently been claimed as having traumatic consequences for the child, but it seems likely that the absence of the father from the home during the period of early upbringing can have almost as serious, although a different impact. The father's rôle is an inter-active one with the mother in the socializing process whereby the child learns to differentiate himself from his mother and moves out of a purely egocentric phase. There are of course many other unfavourable family circumstances such as mental illness of the mother, alcoholism of the father or fecklessness of either parent. At the other extreme, over-protectiveness and over-indulgence of the child can bring its own disadvantages in the same way that inordinate demands on the child to be successful in school can occasion disturbance.

Differentiation of the sexes

An almost universal phenomenon is the differential achievement in school of boys and girls which seems in the greater part related to the rôle ultimately cast for them by the parents and for which in small ways, often insensibly, they are prepared. Girls are usually the sufferers educationally in this rôle differentiation. The severity of the difference created varies of course with the culture. At its mildest level it may mean giving dolls to little girls and toy motor cars to boys but at its most extreme it can mean induction to purdah at an early age, affiancing and marriage in childhood and a prescribed learning routine through which the job of being a wife is inculcated.

Through stories and games and by imaginative and pleasurable anticipation of the future, girls more clearly than boys have mapped out for them the rôle they are expected to fulfil. So successful is the indoctrination that girls will even conceal mathematical, mechanical or spatial ability in the fear that by displaying them they will appear less feminine and less attractive to the opposite sex. The stronger the influence exerted by society, the earlier the difference between the sexes becomes apparent. That it is an attitudinal variable rather than a physiological one is suggested by the fact that in developing countries where the emphasis on a domestic rôle for girls is most apparent and early marriage occurs, the onset of puberty is on average two years later than it is in the most developed countries where the differences in abilities between the sexes is later in appearing and where there is less compulsion for girls to suppress a career in favour of marriage. But even in developed countries, difference in educational achievement between the sexes is such that by the age of thirteen or fourteen boys, on average, are superior in mathematics and in technical skills and mechanical abilities. Girls display from this point on an aversion to diagrammatic representation, to abstract mathematical reasoning and to geometrical and graphical inference. While there may be some reason to believe that sex difference in language acquisition occurs perhaps as a consequence of the earlier sensori-motor development of girls—such that girls are ultimately superior in most language skills except listening comprehension where boys are superior—there seem no reason to believe that there is an organic basis for the differential educational achievements of the sexes.

Language of instruction

Given that a child is fit and well, the gravest handicap he can suffer in school is to be unfamiliar with the language of instruction. Millions of children throughout the world suffer such a handicap for various reasons.

In former colonial territories the language of the colonizers generally became the medium of teaching. Not as a rule because of the wish to make the indigenous population adopt a different language but because it would have been too difficult to have created textbooks in the native language that would lead to the highest levels of education. In many cases this medium of instruction has been retained after independence because there is no immediate alternative available. In countries of Africa, South America and the Far East so many different languages exist within a country, often over short distances, that it would be an enormous task to create teaching in all of them. Some countries, like India, have developed a single language as the nation-wide second language but few have been able to offer all teaching in the vernacular. In Mexico, for example, there were more than 50,000 villages representing over one million people where the national language was not spoken. The problem is greater than merely that of securing more effective language teaching in school. It is the problem of unifying the cultures within a single nation through the medium of a common language, whether or not the vernaculars continue to be spoken.

SOME REMEDIAL MEASURES

The need to introduce change

Of the factors external to the education system which contribute to wastage few are directly amenable to short-term treatment. Since most of them point to a malaise or retardation in the economy and in the society itself, it could not be expected that short-term answers would be available. Development plans are vital if, within the total development, educational expansion is to receive not only that proportion of national expenditure commensurate with the benefit it brings but also the co-ordinated support facilities that it needs to improve its existing efficiency. Plans cannot succeed by legislation alone. Attempts to compel members of society by legislation will in the end prove sterile since it is possible to satisfy the letter of the law without subscribing to its intent. Although human motivation is difficult to change, the objects towards which it is directed can be replaced by others provided that appropriate methods are adopted. Persuasion by mass media has a part to play—national campaigns, rallies, placards, displays, radio programmes, newspapers, all contribute; but if the change is not to be merely transitory it must be implanted in the communities which provide the most convincing frame of reference within which individual and family behaviour is adjusted.

Even though it may take decades to produce the fundamental changes and improvements that are necessary, direct action can be extremely successful if it is specifically focused on the critical problems that beset a nation's education. Since for each country the problems are different both in constitution and the way in which they present themselves, diagnostic studies of the major problems are necessary for each country separately. Campaigns too must be planned and priorities allocated in terms of the greatest benefit to be achieved. It is likely that in the process of doing so there will be a clash between the values to be served. For example, the most severe problem may occur among a minority group of nomadic people whereas for the great majority of the population what is required is the education of adults towards an understanding of the function of schools. The cost of the two campaigns may turn out to be almost equal and both cannot be afforded. An administration may be faced with the decision to defer any attempt to offer any form of education to the nomads as against improving the school attendance of the majority of the population. There is no rational answer to this dilemna. It is a matter for the conscience of politicians and administrators.

One can guess at the way in which decisions would be taken. In a country still unable to offer universal education and faced with high drop-out in the first two grades, the decision will almost certainly be to campaign towards reduction of drop-out and to defer the aid to the minority group. On the other hand, in a well-developed country with universal educational provision and low drop-out but high repetition, having minority groups which contribute most of the small drop-out, the decision is likely to be to focus on the minority problem.

The use of nation-wide campaigns is usually only justified after pilot studies have demonstrated that the means to be used will be effective. Lessons should be learned from modern marketing procedures and from human engineering. The 'product' must have the significance, the shape and appearance that will appeal. It must be 'packaged' in convenient and attractive forms. The 'tasks' to be performed must be adjusted to the characteristics of the 'workers'. To achieve this, close study of representative communities in necessary, followed by the design and construction of a number of pilot studies, emphasizing different elements. While it would be too idealistic to suppose that a controlled research design could be employed to distinguish the separate and interaction effects of the various ingredients of the programmes, some comparisons are possible which would allow a more streamlined programme to be developed. Of necessity, the studies must be short-term and the aim should be to produce viable programmes within the span of one year.

Examples of direct action programmes

It must be evident from this outline of procedure that model programmes for imitation cannot be offered—even if space permitted all the problems so far considered to be dealt with. It is evident that the causes of wastage rarely occur as isolated factors. In almost every circumstance we are faced with a complex of interacting variables, stemming from a fundamental set of conditions. Thus the examples of action programmes outlined below are no more than sketches of what might be done.

Modifying prestigious education. Turning first of all to those nations whose populations have a positive though misguided attitude in that they seek a type of education which is inappropriate to the manpower needs of society: one way of dealing with the problem is not to resist or conflict with popular aspiration but to work with it, gradually modifying the characteristics of the schools which are held in high regard. Within a particular district those schools having the highest prestige both in terms of parental preference and in terms of their scholarship status would be used as the vehicles for modifying the popular conception. Perhaps an academic secondary school could be persuaded to adopt rural science courses and courses in various types of technology which would become part of the general curriculum and also form options within a selective curriculum. These would be given special facilities and staffing provision within the school, while simultaneously the school would mount a campaign to explain to parents the benefits to be derived and the facilities on offer. The way would be opened for realistic aspirations to be created, without departing from the apparently traditional system by also creating special opportunities for children pursuing such courses to enter institutions of higher education where their studies would continue and relating these in their turn to good employment. The reason for choosing schools of high prestige is that any imitation of the prestigious schools tends to occur quickly and a more natural innovatory process takes place than if all schools are importuned to make the change at once. It is particularly true in countries where private schools flourish.

An American experiment. The most extensive, expensive and elaborate programmes aimed at relieving the educational disadvantages associated with relative poverty have been developed and carried out in the USA. A recent summary of this experience is given in *A Study of our Nation's Schools* (published by the United States Office of Education in 1970). It documents what can only be described as the over-all failure to achieve

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the impact intended, let alone that which might be commensurate with the expenditure of resources. The failure can be described in a number of forms depending upon the point of view adopted. First and foremost, however, is the failure to win the support of the alienated community, which remains suspicious and sullenly resentful to the end. The fact that racial prejudice added to the problems of relative poverty must be taken into account in assessing the difficulty. Although this may be an extreme association, similar differences do exist elsewhere in the world both in terms of race and of caste. In other words, where there are minority groups who historically or by force of circumstance are compelled to take up low paid menial jobs, the association between race, caste or religious affiliation, and poverty will tend to be strengthened. Once the process starts it is not a one-sided prejudice alone that has to be contended with: not only does the majority regard itself as fundamentally superior, but the minority regards itself as being despised, exploited and the object of condescension. One of the mistakes that appears to have been made in the USA is to identify the programmes with the enlightened and liberally-minded people from each group for whom it is easy to act as if no difference existed and who attempt to deal with prejudice as if it were merely an imaginary state of mind. When prejudice exists in a consolidated form of custom, expectation and total way of life it cannot be overcome by the few protesting their disbelief in its existence or in the reality of its foundation.

A preferable way of securing the aim intended, or at least one that would give it more chance of success, would have been to give the militants in the minority groups the opportunity to design their own programmes, offering the resources needed and the technical help if it should be required but leaving the direction of affairs to those who in the eyes of their people most strongly represented their resentment against the rest of society. Tolerance of others can only come about once self-esteem has been acquired, and responsibility towards the whole of society can only come when the minority is faced with the task of designing and administering its own resuscitatory processes.

It is difficult for those who have the goodwill and ability to produce the needed programmes to hand over the control of social aid to those whom they know are less accomplished and probably less well-intentioned. Nevertheless, even when it is certain that the resources will be to an extent misused and that part of the educational programme will be designed towards indoctrination of prejudice the social adjustment of minority groups requires that they be given a chance to recover status. Mis akes made and the resources misused will not be wasted since they

will have enabled the social dynamic to be turned towards constructive rather than anti-social ends. A second kind of major mistake that seems to have occurred in the USA programmes is in the construction of compensatory schemes rather than those designed to accelerate achievement. There is a basic difference in point of view between these two ideas. Compensatory programmes identify the practices and facilities in higher social class areas with the higher educational achievements with which they are generally associated and seek to insert in the pre-school and school-based programmes the apparently missing elements. This relatively naive point of view not surprisingly fails to achieve its intention since the practices and facilities which are part of the way of life of one community cannot simply be packaged and condensed for assimilation by another. To achieve the ends desired it is necessary to look more closely at the educational disadvantages themselves and to deal with them directly in their own terms. For example, it is not surprising that the minority groups resent the attempt to teach their children the habits of speech which characterize a privileged dialect rather than dealing directly with the limitations and ambiguities of the language in the dialect they normally employ.

While this has been less of an example than a brief and sweeping critique of experience in the USA—gathered mainly from the discussions held under the auspices of the Ditchley Foundation (England), attended by leading American educators and social scientists involved in programmes designed to relieve poverty and the educational disadvantages associated with it—it is near enough to the point of view which should guide the design of programmes to deal with the relatively poor as to make an example as such unnecessary.

A programme for Asia. In the course of its studies for the Asian region, the technical seminar on educational wastage and school drop-outs (convened by Unesco in 1966) designed a number of illustrative projects. Among them was one which has relevance for an agricultural region with a population whose attitudes towards education are neutral. It focused on an agriculturally biased curriculum, the organization of school work forces and automatic promotion in the first cycle of primary education. Its ultimate aim was to reduce drop-out and absenteeism attributable to withdrawal of children from school for work in the fields at regular points in the seasonal cycle. The project recognized the kind of problem raised at the Conference when it was pointed out that a good deal of the drop-out in Ethiopia occurred in certain months of the year in the harvest season.

The objectives of the project were to increase the holding power of the schools by adjusting school activities and terms to the seasonal demands of agriculture in the area; to adjust the school curriculum to the practical objectives of life in an agricultural region; to reduce drop-out and absenteeism and to secure a positive attitude towards the school by using it as a unit working force at appropriate times in the year; to release the first cycle of primary education from the onus of preparing for further stages and instead to direct it towards functional literacy and numeracy and rural life. It was recognized that to secure these objectives there would have to be special training and in-service training of teachers and inducements for them to stay in such districts. It planned a preparatory stage through which inter-ministerial discussions would lead to harmonious working and in particular to securing agreement on a terminal point in the curriculum of the primary cycle which could function as a coherent set of goals. It also suggested that preliminary surveys of the social structures and work patterns in the projected areas should be carried out and that a control area should be selected for comparison.

The project had an experimental intention and it was suggested that the area chosen for study should be characterized by high drop-out and a predominantly non-migrant agricultural population. The experimental area was to be limited to at least thirty but not more than fifty schools. The outline went on to describe experimental preparatory and action procedures that might be adopted. As an exercise in securing better adaptation of education to the community the project certainly deserves a trial.

Meeting the needs of the community. An alternative point of view expressed at the Conference saw drop-out from school as something of an inevitable phenomenon in certain societies, where the pull between the aims of education and those of satisfying community aspirations were too strong. The problem was how to recuperate the deserters once drop-out had occurred. It was suggested that a closer look be taken what the young drop-outs are doing and that perhaps they could be regarded as enrolling in the school of life. The task of organized education would then be to adapt its services to make them more easily accessible to children who had voluntarily deserted school. It was also indicated that the economic problems for families among whom high drop-out occurs are often underestimated. Many schools still require fees on top of payments for school uniforms, textbooks, and transportation. As the child grows older the pressure to withdraw increases as direct

school costs increase and the loss of the child's help in the home, the market or the farm becomes more apparent.

The condition of absolute poverty is the most difficult to relieve by other than direct economic and social action. Re-housing, re-training of workers, subsidized accommodation, reverse income tax, rehabilitation of families and free medical services are all possible courses of action.

All of them tend to create dependence on others and to establish bureaucratic procedures through which they are administered. They do not as a rule secure the co-operation of the families, who become inured to queues, to impatient treatment by petty officials and to the receipt of charity. Much of the time they still remain ignorant of their entitlement. Despite the tragic burden of their lives, they often remain unaware of the unpleasantness of their squalor. What is habitual is familiar and painfully comfortable. They may not *wish* to change their houses, their work, or their way of life. Above all, they may not wish to lose the presence of their children.

Any scheme of action, however subsidized, must try to create corporate self-help. Patience and tolerance of apparent waste is a necessary requirement of those who administer such schemes. Adult education of a type aiming at the creation of skills which will implement the self-help process is preferable to that aiming at literacy and numeracy. Progress in the persuasion of such families to release their children for attendance at school must wait upon the prior recognition that education is valuable. Schemes which aim at the isolation of the educational concern for children from the total condition of dire poverty are doomed to fail and it would be foolish to suggest an example of a project which treated education as a thing apart.

Schools have traditionally taught hygiene and in countries where endemic disease is rife they have taught preventive measures and the natural history of the organisms that cause disease. Through the provision of school meals they have also attempted to rectify undernourishment and malnutrition. Despite this provision there is little evidence that it has had any direct effect upon personal practices outside school. Even among those who have followed biological studies at university there is a reversion to traditional family practices in the home village. What is insufficiently realized is that cognitive awareness of the causes of ill-health and disease does not of itself create conviction that one is personally at risk. Even less does a list of things not to do help to form hygienic habits. There is a need for schools to provide opportunities for simulating conditions of hygienic living. Particularly in secondary

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schools, model homes should be provided where girls and boys together go through the routines of keeping house, cooking and caring for infants. The importance of this simulation is not merely that particular skills are taught but also that the attitudes of the sexes to each other and to the division of labour within the home are rehabilitated. Such provisions within the school are not expensive and it is important that the model homes are realistic and not so far removed from available facilities that they are treated as an ideal state of affairs which is unattainable. The schools can also contribute as work forces in the programmes of social and preventive medicine, with which schemes for school hygiene should be integrated.

The relationship between many of the factors that have been dealt with in this chapter and educational wastage arises from an assumption of causality where little evidence apart from the existence of particular cases is available. Before attributing wastage to any one or a combination of factors it would be scientifically desirable to test out the relationship experimentally. Since action is desperately needed, however, it is necessary to cut out the stage of diagnosing causes and to move to remedy what, as a result of community surveys, appear to be the syndromes of the malaise in the context of education.

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Chapter six

The 1969 survey and the 1970 Conference

THE PREPARATORY WORK

The first questionnaire on educational wastage at the primary and secondary levels was sent to Member States by the International Bureau of Education in August 1968. Then, in October that same year, the Unesco General Conference decided that the theme of the 1970 International Conference on Education should be widened to include higher education. The first questionnaire was answered by 78 Member States, the second by 53. At the time these two surveys were made, the Unesco Office of Statistics sent out a questionnaire on school enrolments by grade for the purpose of carrying out a quantitative analysis of wastage. This is the subject of the third chapter of our study. Furthermore, Unesco plans to publish a work dealing specifically with the question.[1] We shall therefore pay more attention at this stage to identifying the chief characteristics of the replies to the first two questionnaires. As a basis we shall take the working paper prepared by the IBE staff with the help of Mr. G. Parkyn (New Zealand) and the two authors of the present work. It might be mentioned that the first draft was submitted to a group of experts for critical examination in November 1969.

The questionnaires

Working out a survey formula taking into account both the diversity of educational systems and the differences in social, economic and educa-

1. Unesco: IBE. *Statistical study of wastage at school*, Paris, 1971. (Studies and surveys in comparative education)

tion policies seems at first sight an almost impossible task. The fact that 78 Member States answered the first questionnaire appears to indicate that the Secretariat formulated pertinent questions, applicable to varying situations. On examining the replies, however, one is obliged to qualify this statement. The problem of wastage is a complex one: while repetition is a relatively simple phenomenon, the same cannot be said of drop-out. Repetition is studied in detail in the first chapter, where the various possible interpretations of it are brought out. It is regrettable that the questionnaire was not accompanied by a definition of the problem, which would have greatly facilitated the work of the education services responsible for preparing the replies. Then again, the duration of compulsory schooling, or even the absence of legislation governing this, were nowhere made clear. Furthermore high drop-out figures lend themselves to different interpretations according as they occur before or after the age at which schooling ceases to be compulsory. Lastly, it should be observed that the form of the questionnaire influenced the replies to some extent and might have led to the loss of some interesting information which did not fit into the model proposed.

There is undoubtedly no ideal plan for a questionnaire, but we might ask ourselves whether a group of experts from various parts of the world should not participate in the preparation of such a document. Actually, in the interests of effectiveness, it would be advisable to take the diversity of Member States more into account and to avoid questions which apply only to a few countries. It might be appropriate sometimes to distinguish between developing and industrialized countries. Different models might even be worked out for different regions.

The questionnaire relating to higher education did not meet with the same response as the first one. Not only were there fewer replies (53), but these were often far from complete. While there are sufficient similarities between educational systems at the primary or the secondary level for national education ministries to be able to answer the same questionnaire, the differences are so great at the higher level, even between universities within one country, that satisfactory answers could not be expected.

It can even be questioned whether such a survey would not have been more effective if a system of differentiating the questionnaires according to the type of the higher education institution had been adopted. However that may be, one thing is certain: in many cases there is no accurate information on wastage in higher education, even in the most educationally advanced countries.

The working paper for the Conference

The working paper prepared for the Conference comprised five chapters: the first contained a statement of the problem; the second, more technical, dealt with the measurement and the extent of wastage; the third gave a brief description of the various systems of selection and promotion at present in force. The next two chapters contained an analysis of causes and remedies. The main ideas will be pinpointed further on. Internal factors in wastage have already been systematically studied (Chapter 4). The reader will therefore encounter once again some of the themes already developed. If we revert to them briefly here, it is in order to draw attention to the material available to delegates before the meeting began. Some of the points raised in discussion will thus be more readily understood and the contents of the recommendation adopted by the Conference will be explained to some extent.

Causes of wastage

The replies as to causes of wastage reveal a rather serious situation: they consist mainly of opinions, impressions, rarely of ascertained facts based on scientific research. Furthermore, the effectiveness of the remedies will depend largely on correct identification of the causes. Actually it would appear that the causal process is not clear and that it is vaguely hoped that the proposal of this or that measure will lead to an improvement. The following passages are extracted from the conclusion of the chapter on causes.

> In most States national education is now a major economic sector, but in an age of nuclear energy, electronics and supersonic aircraft the sector is being conducted with makeshift, out-of-date principles. In most instances it is irrelevant to the needs of today. In the greater part of industrialized countries the educational systems continue to be deeply marked by the conceptions which presided over their creation in the nineteenth century. Naturally there have been minor adjustments, some changes of detail, but fundamental ones are the exception. What is more, these systems have been transplanted in developing countries without being subjected to essential modifications, without any real attempt being made to adapt them to the needs and motivations of the population concerned.
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> *Internal factors.* They depend above all on the education laws, or more simply still, on the education authorities: their setting-up, the changes in them are decided most often on an empiric basis. The time would

seem to have come to undertake research work to prove the rôle, if any, that they play in drop-out. It appears indispensable to co-ordinate this research at the international level and to circulate the results not only among teachers but also among the administrative authorities and those responsible for making decisions.

Grade-promotion. Statistics that show the great differences of age among pupils of the same class in school systems with traditional promotion methods and the results of standardized testing that show the great disparity in the results achieved by pupils at every age level confirm what was already known: the ability of children to learn varies greatly. In consequence systems of school organization based on the premise that a group of children entering school at the same age can progress together through a defined syllabus of instruction at the same rate are practicable only if the minimum amount of learning required for promotion from grade to grade is so small that all except the mentally deficient can master it.

In practice, the amount of learning expected in most grade-promotion systems has tended to be based upon the ability of the average or even the above-average pupil, namely, the pupil who is expected to be capable of proceeding to selective secondary education. In such circumstances, failure is built into the system for a considerable proportion of pupils; and the consequence of failure is premature leaving or repetition of grades.

Such failure is closely subordinated to the manner of evaluating work and the performance of the pupils, the method of grade-promotion and possibly the results of the end-of-the-year examinations.

Curriculum and methods. Today, man is no longer restricted locally. Technical progress, rapid development of the means of communication and of the information media largely contribute to giving world news an important place. This is particularly true for the heavily industrialized countries. Yet there has not been a similar development in outlook and values; and existing institutions, more particularly the family and the school, often find themselves unable to respond to new needs. In the majority of cases, schools continue to provide an education that is traditional in content and in methods.

Programmes are encyclopaedic. When it becomes indispensable to introduce new subjects, a few new ideas are tacked on, but the programme in its entirely is rarely reviewed to take account of new priorities. Usually, a concern for bringing teaching up to date is noted in a few subjects only. In general, teaching methods still leave much to be desired. Where the curriculum is largely encyclopaedic they remain essentially based on didactic teaching and memorization. In such a combination of circumstances there is little opportunity for initiative on the part of the teacher.

This lack of adaptation of the school to present-day conditions is resulting more and more in the children losing interest in school learning and even all interest in knowledge of any kind. Such absence of motivation has serious repercussions on school results. This is found among a large number of children, whatever their social origin. The consequences, however, are much more serious for children of underprivileged socio-cultural levels who, contrary to certain of their schoolmates, do not enjoy a family background that enables them to respond fully to what is required at school.

The teachers. The inadequate training of teachers is often quoted as a major cause. While it would seem that cultural and scientific training falls short of what it should be in a number of States, there is, on the other hand, unanimity in regretting the superficial, empirical and irrelevant nature of the psycho-pedagogical training. Teacher candidates learn in the course of their studies that failures are normal and necessary. Why should they adopt another point of view once they become teachers?

The increasing lack of adaptation of education systems to present conditions makes the teacher's task more and more difficult. In many countries a bitter conflict is developing at the level of the pupil-teacher relationship. The teacher, to whom falls the task of transmitting a culture whose goals seem more and more irrelevant, becomes a symbol of coercion to the pupils. In the face of opposition that often he does not understand, he has recourse more and more to restrictive methods in order to maintain his authority. The conflict then only becomes more acrimonious and can have profound repercussions on the personalities of pupils and teachers.

The gap between what is taught and the pupils' interests and aptitudes widens as one descends the scale of scholastic prestige (theoretical, technical and practical courses) The difficulties encountered by teachers are therefore related to the courses they are teaching, and consequently all courses do not have the same attraction. Further, towns attract teachers more than does the country. In many education systems these values on the whole correspond to the hierarchy of teaching posts. It follows that the least well qualified teachers are regularly appointed to the less favoured positions which in fact require the most solid qualifications.

Criteria for selection. Until recently social position depended almost entirely on out-of-school factors. Increasingly, at the present time, it is the schools that carry out the task of socio-professional selection.

In many countries, the campaigns undertaken to provide democratic access to education have contributed largely to spreading the idea that the schools could be a means of social advancement. This hope is largely dispelled by the facts, as will be seen from an examination of

statistics showing the percentages of retardation and failure related to socio-cultural origin. In certain schools the hierarchy of specialized subjects reflects existing social levels.

For the schools these facts raise, in a very direct manner, the question of the choice of selection criteria. A quantitative assessment of the pupil's performance is the main criterion used in the majority of school systems. This method, which is increasingly called into question, gives rise to two kinds of criticism: it is arbitrary, a characteristic which a knowledge of examination techniques is not sufficient to eliminate entirely; and it concentrates the child's attention on marks. The pupil is concerned only with finding the right answers, not with the method of solving problems. He thus develops poor habits of thought (memorization of formulae, guesswork, etc.) for fear of not reaching the standard. When it is remembered that the vocabularies of teaching method and of ethics have much in common (error, duties, good, bad), that school rating is thus subject to a value judgement and that a child's future at school depends on the hazard of his marks, this concentration of the pupil's attention on results is easily explained.

These criticisms apply just as much to selection systems based on examinations as to selection systems based on the assessment of results during the course of the year. However, selection carried out by examination has the appearance of being the more arbitrary method, with least regard for the interests of the pupil, who must stake his future on the work of a few hours only. Such conditions create a feeling of anxiety which does not allow the pupils to do their best.

External factors. There are three which are basic:

(a) Individual differences, which are inevitable.

(b) Inadequate knowledge of the language of tuition, which is a very important factor in schools providing essentially verbal learning. The inadequacy may be due to social background or to the fact that the child's mother tongue is not the same as the language of tuition.

(c) The social and cultural level of the family, a factor of increasing importance as the successive levels of education are reached. This explains why children from the underprivileged social strata have little chance of proceeding to senior secondary and higher education.

Measures to reduce wastage

It may be useful to state again that each country's wastage problem will differ somewhat from that of other countries. There will, of course, be

many common elements in the diverse situations, but the total pattern or structure of each country's wastage problem will, in a real sense, be unique. For this reason, specific local research into the conditions of a national wastage problem is a prerequisite for effective and economical action. Again we shall quote freely from the working paper, this time from the chapter on measures to reduce wastage.

> But in many countries an important prior question may have to be considered and resolved before specific researches into wastage are likely to be worth embarking upon. This is the question of the amount and kind of education that is needed and that can be afforded. As has been pointed out earlier, it may be that many of the countries with the most severe wastage problem might not be able to continue to increase the proportion of children enrolled in school if they were successful in retaining at school the large number of pupils who are at present leaving prematurely. A difficult choice of policy may be forced upon such countries, between fully educating the present proportion of children enrolled in school, and partly educating a larger proportion. At whatever level of education such a choice may have to be made, whether at the primary, secondary, or the higher level, it will profoundly influence the country's policy on such matters as the selection of pupils, repetition, drop-out, and the exclusion of failures, and it will determine to a considerable extent the kind of research problems that will be most relevant and will need most immediate allocation of research resources.

Trends in promotion policy. The virtues of repetition have in fact proved illusory: repetition is not in itself a cure for the deficiency which causes a pupil to do unsatisfactory work. A child who has to repeat a class because of slow learning is not likely to become a faster learner and will probably have to repeat again. There are several possible ways of reducing repetition which, roughly speaking, can be summed up under two heads, namely, maintaining the existing pass standard and excluding from school those pupils who are incapable of reaching it (this can be done by stringent selection at the point of *entrance* to each level), or adapting pass standards to the actual range of abilities of pupils.
It is important to note at this point that a lowering of the pass standard for promotion from grade to grade need not cause a lowering in the attainment levels of pupils in the various age groups. Grade averages of attainment can of course be expected to fall when promotion to a given grade is no longer dependent on reaching as high a standard as previously. Age averages of attainment, however, appear to have risen over the past two decades in such basic skills as reading, in those countries that have been developing an almost automatic system of promotion in the primary school.

This being the case, automatic promotion appears to be the direction in which all school systems tend when they have developed sufficiently to be able to provide for all the children of a community. Obviously automatic promotion cannot be applied at one stroke. A gradual process is involved, allowing at the same time for changes in teacher training and the adaptation of curricula, methods and equipment. New methods of evaluation are central to the process of evolution towards automatic promotion. This process is briefly outlined here, along with the essential changes it entails.

The first change is from *external examinations*, requiring predefined levels of attainment and supervised by inspectors or heads of schools, to *internal assessment*, based on an objective assessment of the child's attainments as compared with those of his classmates and a subjective assessment of the total effect of not promoting him. The second stage is the change-over from *attainment promotion* to *automatic promotion*, sometimes called age promotion.

> Automatic promotion usually implies that children in each of the different grades in a school do follow a common programme, but that wide variation in levels of individual attainment is accepted in each grade. Often, too, some forms of ability grouping are adopted, either by the division of a class into sub-groups or by the constitution at each grade level of complete classes differing in their ability levels. Different syllabuses of instruction for the basic subjects are commonly provided for such classes, so that in mathematics or reading, for example, the pupils in a slow-learning class at a given grade level may be in fact lower in attainment than the pupils in the fast-learning class of a lower grade.

The logical end-result is a further step from automatic promotion to continuous progress instruction, by which each child proceeds at his own pace.

> With such a system the concept of 'grade' as a principle of organization or grouping of pupils is no longer relevant. The term can still refer to the level of achievement reached by an individual, but not to the class group he is placed in. Indeed, the individual pupil need no longer be placed in a school class in the traditional sense of the word. Pupils will be grouped together in various ways for various purposes and much basic learning will proceed through individually prescribed study assignments.

Measures concerning the material and institutional basis of education. The main proposals made by Member States are listed hereunder:

Extension of the school network, principally in rural zones: primary schools in developing countries and secondary schools in industrially advanced countries.
Development of pre-school establishments, principally in the populous districts of the large cities and in rural zones.
Development of centres which look after children while their parents are working.
Development of free means of transport and of school bus systems so as to enable the greatest number, whatever the place of residence, to have access to educational establishments.
Improvement of equipment (teaching materials, laboratories, libraries, etc.).
Reduction in the size of classes where the greatest need is felt.
Development of health and school medical services.
Establishment or extension of social services (canteens, free distribution of food, clothes, etc.).

Changes in the form of education. The idea of a basic school should be reconsidered in the perspective of continuing education. The basic school can no longer provide terminal education for anyone since the rapid evolution of society demands the continuous acquisition of new knowledge by all.

> Furthermore, to eliminate the gap between the kindergarten and the primary school it might be advisable to attach the first three years of primary schooling to the last year of pre-school education so as to create a first educational unit. Within this school the child would acquire the basic concepts. The fourth, fifth and sixth primary grades would constitute the second educational unit. Finally, in the third unit, extending from the seventh to the ninth grades, differentiated programmes within the same class would be introduced.
> Within each unit promotion would be automatic when the measure was first applied. Subsequently classes could be abolished altogether.

By way of conclusion to this rapid review of the working paper, we cannot but quote *in extenso* the last page.

> Intervening in school organization and articulation, the reorganization of promotion systems towards the reduction of repetition should be planned bearing in mind the possibility of differential lengths of cycles. While there has been successful experience in moving directly to automatic promotion, a phased reduction of promotion barriers, beginning perhaps with that between grades 1 and 2, may be more appropriate

for some countries. A more rational organization of the school year and its subdivisions should be considered. The total educational provision of courses beyond the basic level should be organized so as to correspond to employment needs and to allow for individual aspiration.

Adjustment of the curriculum to take account of individual differences as well as fitness for life in the community would increase motivation, adjust teacher expectation and thereby reduce drop-out.

The initial and in-service training of teachers to develop particular strategies and methods of teaching and more appropriate attitudes would serve to reduce loss through failure to acquire basic skills.

Public health, social welfare and adult education agencies could all contribute to the greater fitness of the child for beginning school and maintaining his attendance at school. Pre-school preparation related to the extension of experience and particularly to language development and acquisition would markedly reduce loss not only in grade 1 but in subsequent grades.

The divorce between the cultures of school and community should be broken by encouraging parental participation in the life of the school and by attempts to communicate the goals and practices of the school to the public.

The constraints of the level of social and economic development upon the development of successful education enterprises should be clearly faced; for instance limited resources should not be disproportionately spent on solving the more difficult minority problems without full consideration of the consequences for the remainder of the education system.

THE CONFERENCE

From the opening address of Mr. René Maheu, Director-General of Unesco, we extract the following passages:

> An educational system may be regarded as effective to the extent to which it accommodates all children of school age, satisfies their own and their parents' aspirations, trains workers in accordance with the quantitative and qualitative needs of economic development, and imparts instruction conforming to an accepted social model and to the traditional cultural and spiritual values, while at the same time meeting the needs for human transformation inherent in any social change. This is what may be called external effectiveness. It seemed to me that, at the present stage, it would be better not to take up so vast and so complex a theme, which permits of so many different ideological interpretations, but to deal only with the aspect emphasized by the General Conference — the

internal effectiveness of educational systems or, in other words, the need to improve the efficiency of these systems by reducing wastage, which is reflected in both drop-outs and repetition of grades.

This phenomenon of wastage, although very widespread, has so far only rarely been the subject of detailed statistical investigation; what is more, much remains to be done before all the methods to be used in such investigation are developed. Little is known of its socio-economic and educational causes, and work on the basis of which measures might be taken to remedy the present situation is still in the very early stages. It is a matter of urgency that we should try to solve the problem, because wastage at the present rate means that resources are being squandered at a time when most countries have to strive to meet the need for increased educational facilities arising both from the population explosion and from the effort to make education at all levels more democratic. So we find that the quantitative expansion in which nearly all States are irreversibly engaged calls for greater effectiveness of the systems employed, which in the final analysis means that it calls for qualitative improvement. Far from being incompatible, as so many economists — following a possibly not entirely unbiased Malthusian line — would have us believe, expansion and improvement, quantity and quality, democratization and efficiency of education are all interdependent. It is perhaps here that the major interest of the theme adopted is to be found. Situated in that area common to both the quantitative and the qualitative, and in which they are indissolubly linked, the phenomenon of wastage, by ruthlessly revealing the defective functioning of the systems, compels us to analyse causes and to seek solutions from a multidisciplinary angle, involving both the planning and the regeneration of education.

It is true that your conference cannot hope to deal exhaustively with such a problem. The session opening today might make it its principal object — and this in my view would be a big step forward — to identify the main factors involved, to define broad lines of research, and to map out methods for the more intensive studies to be pursued in the particular context of the various educational systems. The Secretariat has merely prepared a text recapitulating the relevant parts of the working paper. It is for the conference itself, using as it sees fit the information to be found in the text and any conclusions which may emerge from its debates, to prepare a recommendation for the guidance of governments and research workers.

After Mr. Maheu's address the work of the conference began with two plenary meetings, followed by committee meetings. A great many delegates spoke, describing the experience of their respective countries,

making comments and suggestions concerning the working paper and proposing the measures which seemed to them best calculated to solve the wastage problem.

Space does not permit a detailed account of each speaker's remarks. Nor do we wish to make an arbitrary selection from among them. We shall confine ourselves to noting those points in the discussions that shed further light on the problem as stated in the working paper.

A distinction has been made between countries, however: not on any arbitrary basis, but because the delegates of the developing countries repeatedly stressed the fact that the wastage problem took a different form in the industrialized countries than it did in the developing countries.

The problem in the industrialized countries

General considerations

The chief cause of wastage would appear to be the widely held opinion that the child is made to conform to the school rather than the school to the child. The school is planned to lend itself more readily to teaching, or even inspecting, than to learning. The idea of failure is built into the system.

Causes of repetition were investigated in a study made of the lower grades of a primary school in a semi-rural, semi-urban region in France in March 1970. The kinds of causes identified were either material or psychological. The findings seemed worth while quoting in full.

Material causes

Repetition due to:	per cent
Overcrowded classes	17.8
Lack of a preparatory year	10
Absence from school (14 days to 2 months); an overburdened teacher being unable to help pupils catch up	27
Too many changes from one school to another	14.2
Too many changes of teacher within the same school	20.2

(Certain categories overlap)

Psychological causes

Repetition due to:	
The fact that a pupil with too low an IQ was not placed in a special school at the start	31

The pupil coming from an immigrant family	18.8
The family background	16.8
Fatigue and various other factors	14.6

It has moreover been found that, irrespective of failure or repetition, a great many young people would leave school before the minimum leaving age if they could. In this connexion a survey was cited which had shown a striking disparity between what adolescents wanted and what their educators thought they wanted. Pupils aged from 13 to 16 were asked what they expected from the school and the same question was put to their parents and their teachers. Of overriding importance to the pupils was learning things which were interesting but, above all, useful and which would enable them to go in for a worthwhile career. The parents also mentioned the importance of training for a career, but insisted that the school should teach pupils to express themselves well both orally and in writing, etc. The teachers, for their part, stressed the pupil's personality, character and independence, which the school should develop, as also an easy manner with the pupil's own age group. This survey also touched on the problem of parents and teachers, which is a major factor in the wastage problem. Parents are far too inclined to judge the results of education on examination results, which, to them, represent something tangible and concrete.

There was the danger of those teachers 'who were so much at home in the educational institution that they chose to remain there', with all that that implied: they were tempted to consider themselves as among the elect and to perpetuate the 'holy people'. 'Since I succeeded...', they would say, and this led to an anti-democratic attitude, which was an obstacle to mass education.

All the unconscious factors which enter into teacher/pupil relationships should be borne in mind, including the difficulty for the teacher of outstepping the methods by which he was trained himself, with the result that, however good any new measures might be, their effect is delayed. Training teachers was one thing but getting them to apply what they had learned once they actually had a class to deal with was another matter.

The importance of the mother tongue, reading and the 'school outside school'. It was in the first grades of primary school the whole problem of repetition was bound up with learning to read, which in turn depended on the child's knowledge of the language of instruction, which might not necessarily be his mother tongue. In the view of parents, as of many

other people, the aim in learning to read was to be able to decipher anything, a newspaper, a poster etc. In the last analysis reading was a question of distinguishing letters.

The teacher's aim was different: learning to read meant being able not only to decipher a text but also to write it. Enunciation demanded an understanding of the meaning of the text. (Here again the importance of the mother tongue was apparent.) It was observed that we read a text faster than we could take it in aurally and we speak faster than we write. Furthermore, we not only learn to speak by listening, but also a great deal by looking, which raises the question of 'the school outside school'. The mass media, particularly television, played an increasingly important rôle. In a survey conducted in one part of Paris it was found that children in the lower grades of the primary school spent 24 hours a week looking at television, that is, more time than they spent with their teacher. If the language spoken by the parents was not the language of instruction, the child learned the language he heard on television: the school was no longer the only medium of education.

The remedies proposed and comments

Before describing the particular aspects of the problem for which measures were proposed, mention should be made of a point frequently stressed at the Conference: it is absolutely essential to change people's thinking at the same time as the structures of education are changed. People in general, and parents in particular, have a certain idea — one might even say a preconceived idea — of the school. No structural change will be effective unless the parents take an active part in bringing it about. Public opinion must therefore be changed. For this purpose the mass media must be used to the full to inform the public about new teaching methods and explain the new aims of education. In countries where rural areas are still economically important, publicity campaigns must be launched there, since rural areas often do not fully accept the school for various reasons which have been explained elsewhere.

Remedies for wastage. One of the first measures proposed was to convince parents that repetition was not a disaster. This has a direct bearing on what was said above: the school is not the only yardstick, for there are people who, having failed at school, do very well in later life. This does not solve our problem, however, for the causes of failure at school would require explanation (Is it the failure of the pupil or the failure of

the institution?) as also the causes of success in later life (Is success dependent on social virtues? What is success?).

Might we observe that while there is some truth in all this, we should not allow it to deter us in our efforts to reduce wastage.

The following measures to eliminate repetition were reported: abolition of the system of dividing education into cycles; reduction in the size of classes; and promotion for all without any examination.

With regard to drop-outs, the following measures have been applied in certain countries: appointment of a teacher to any locality having at least seven children of school age; fining of parents who do not cause their children to receive compulsory education; imposing of very heavy fines on persons employing young people under the age of 16; requiring of employers to make a financial contribution to evening courses or correspondence courses for employees not holding the primary school certificate; provision of supplementary education during military service for recruits not holding the primary school certificate; and provision of temporary residences for disadvantaged students.

Content and methods. It is a mistake to regard elementary education as an abridged version of higher education. The elementary school should take inspiration from the methods used in the infant school. One solution to the wastage problem would be a common core which would leave pupils free to choose later on. Another solution would be to introduce streaming in the primary school, leaving pupils the possibility of changing from one stream to another.

Continuing education is a necessity. For one thing, evening courses should be made available to all those who for various reasons had had to interrupt their studies. Such courses were particularly important for people in employment, who might otherwise lose their way.

There is a need for an education which would lead pupils to attach equal value to manual and intellectual work and would inculcate the idea of the dignity of labour. This would help to change attitudes and to prevent the forming of élites.

Psychomotor progress goes hand in hand with intellectual progress and it is vital for children to have suitable, regular physical education as a part of their all-round education.

In order to prevent some children from being doomed to failure before they even entered school, it would be advisable to extend free pre-school education and in the primary school give the mother tongue and mathematics priority over encyclopaedic verbal knowledge.

The importance of the teacher could not be over-emphasized and two proposals which were made are worthy of consideration. First, with regard to the shortage of and the urgent need for qualified teachers, on-the-job training should be introduced, statutes worked out for them and other inducements provided as immediate palliatives. The second proposal related to the changing of attitudes: it was absolutely essential to train teachers to deal with all the psychological, sociological and racial[1] problems involved in education. Everything is possible in education if the teacher is fully aware of the process in which he is engaged.

Promotion and selection. The solutions proposed varied with the needs of the countries concerned. Here we shall note only three of the comments.

First, a contradiction was revealed between automatic promotion, which presupposes individualized instruction, and the democratic or 'mass' education advocated by some. The two are incompatible in practice for obvious reasons (time, means, etc.).

Second. in a country which had largely succeeded in eradicating wastage (3.3 per cent in 1969 for the whole education system) automatic promotion was regarded as a bad thing because it lowered the standard, whereas examinations and repetitions raised the standard of knowledge. Repetition was seen chiefly as a teaching problem: if the teacher was able to interest the pupil and enable him to develop there was no need for repetition. School failure was the failure of the educator or the institution, not of the pupil.

Third, one country had tried substituting for the traditional methods of selection one which it considered more human. This consisted of combining selection by marks with a system of observation and guidance.

A pertinent comment to conclude this section: no matter how urgently changes are needed, it is dangerous to proceed without prior experimentation. It is always the pupils who suffer and the purpose of the operation is defeated.

The problem as it affects the developing countries

In developing countries the wastage problem is complicated by the existence of other factors whose influence has by no means been neutralized

1. 'Political' might also be added.

as yet. These factors, it was noted, do not play the same rôle everywhere and perhaps do not account for the varying rates of wastage. However, in most countries these factors interact and make it even more difficult to deal with the problem.

The aftermath of colonization. In one-time colonies wastage may be ascribed to the choice of a school system designed to produce an élite, mainly administrators. Since for many of these countries independence has only recently been gained, their educational structures have not yet been entirely changed; often little progress has been made and their inappropriate educational systems contribute to idleness.

The language of instruction is frequently that of the former colonizers. For many people, especially those on the land, this language cannot be dissociated from memories of colonial times and for understandable psychological reasons they refuse categorically to learn it. From a vague fear of losing their personality or their culture many parents in rural areas take their children out of school after two or three years. The multitude of ethnic groups and spoken languages may also affect wastage. The choice, often arbitrary, of a compulsory official language of instruction sometimes results in linguistic minorities refusing to leave their children in school or even allowing them to go to school.

The decisive factor, however, is the lack of resources. The population explosion due to the improvement in living conditions has not simplified the problem.

Consequences of the interaction of these various factors

Wastage and inefficiency. Some countries which devote one-quarter of their budget to education have wastage rates in the vicinity of 90 per cent in primary education. There are two main reasons for this. The first is that the school is still designed for an *élite*, is unrealistic and applies a policy of selection in contradiction to the needs of the countries concerned. The second is the shortage of teachers and their inadequate training. However, it is no use training teachers who turn pupils out into the street at the end of the school year to keep enrolments down.

Lack of places in schools. Wastage is also due to the fact that there are not enough places at the secondary and higher levels for all the pupils who successfully complete their primary education. In one country

it was noted that out of 34,000 candidates who sat an examination for admission to secondary education only 7,400, i.e. less than one-quarter, were passed.

The tremendous increase in school-age populations is partly responsible for this situation. For example, one country in Central America with a total school-age population of 8 million has only 2.29 million children in school.

The remedies proposed

The rôle of the school. In the developing countries especially, schools must provide practical training leading to employment. It was pointed out that the aim of education was not only to develop the individual but to increase the labour force. The following measures were proposed: mass education with a guarantee of employment for those pupils who do well; the extension of technical education; practical training in secondary schools, in close liaison with the village community; and rural education with an economic and social purpose.

The problem in rural areas is much more acute, and the school can play an important part in introducing new methods and explaining the advantages of modernization, and education in general, to tradition-respecting villagers. In one country, after much experience, it was found that it was not enough to conduct literacy campaigns in rural areas—'cultural zones' had to be established afterwards in order that the new literates did not forget what they had learned.

Wastage. To return to the problem of wastage proper, the following remarks are apposite. In the developing countries the battle has to be won principally in the primary school and in rural areas. It would be worthwhile for countries which can do so to provide pre-school education for all. The expressed objection to this was that there was little point in providing pre-school education when it was difficult to provide primary education for the entire school-age population.

The introduction of a salvage system for those who had repeated more than three times or had dropped out could be of help. It involved devoting four working hours a day in the factory to education. In this way drop-outs could still study while in productive employment.

Once again the importance of the teacher was emphasized and the establishment of special centres for pre-service and in-service training was recommended.

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Education and development. There is a very close connexion between education and development and too high a wastage rate can in the long run slow down or arrest development. The State was the loser when pupils were compelled to come up to a certain standard in *all* subjects.

The following proposals were made: over and above the national budget allocation, 1 per cent of the taxes paid by each citizen should be devoted to education; plans should be so designed as to make optimum use of resources; close liaison should be maintained between the school, the home and the community; the syllabus should be reorganized in accordance with the life of the community; provision should be made for school food programmes.

The steps to be taken vary of course with the needs and, above all, the resources of each country. Good will and enthusiasm, however, are more important than material conditions.

By way of conclusion we quote the following statement: 'Education is an essential factor in social progress and a prerequisite for the development of modern societies. It is the most profitable of social investments'.

THE RECOMMENDATION

Having a recommendation adopted by an assembly of more than 200 delegates is a task for diplomats rather than educationists. The wastage problem differs so widely from one continent to another, even from one country to its closest neighbour, that it was necessary to reach some common ground, yet without sacrificing the essential: the improvement of the efficiency of education systems. Those of us who had spent months analysing the replies of States and preparing the working paper could not but be disappointed by the text adopted in July 1970. It lacked vigour and it seemed to place all the causes on the same level and propose unoriginal remedies. The full text is shown in Appendix 1.

Actually, looking at it six months later, we would qualify this opinion. The twenty-eight paragraphs devoted to practical measures to reduce wastage do cover all the aspects of education systems which must be improved. The whole functioning of the school is called in question, even though this is not explicit. There was nothing original in this because the leading specialists have been advocating the renovation of education systems for decades now.

In a recommendation of this kind it is scarcely possible to arrange the remedies proposed in order of importance. It is for each country to decide on priority measures and to select those which concern it most

directly. There is no panacea for the wastage problem, closely bound up as it is with a country's cultural, economic and social policy. It seems superfluous here to go into the various articles in detail, especially as we have already attempted to bring out the rôle of the principal factors in the preceding two chapters, so we shall confine ourselves to a few guiding ideas.

Any education policy aimed at reducing wastage is based first of all on the goals which are set for education (paragraph 4). Yet very frequently official texts concerning objectives are worded in vague, general terms: they give the impression of having been added as an afterthought to the laws, regulations or curricula. In our opinion, the answer to the question, 'What kind of man do we want to produce?' determines the choice of school organization, curriculum content, teaching methods and the means of assessing the performance of pupils.

New goals would be inconceivable, moreover, except in the context of lifelong education (paragraph 5). Then again, this must not be regarded as complementary to the existing education systems but rather as a new conception demanding a complete reorganization. The importance of these prerequisites for renovation cannot be over-emphasized. Nor can the need for innovation. Education systems planned and organized down to the last detail on the basis of clear, fully defined objectives are rare indeed. The impression gained more often than not is that of a variety of elements unrelated to each other or to the proposed aims. The innumerable ramifications in education systems and trends in curricula illustrate this situation only too well. Obviously it is easier to make minor changes than to renovate the whole system. The above remarks also apply to the implementation of the recommendation by the education ministries. It would be futile to imagine that application of any single measure provided for under this or that paragraph could in itself produce a real improvement. The following comments are meaningless if not seen in the light of the foregoing considerations.

The importance of the first years at school is brought out in paragraphs 13, 17, 18, 19 and 20. Has anyone ever counted all the sounds, signs and words which a child must assimilate in two or three years in order to be able to read, write and master the basic concepts of arithmetic?[1] The difficulty of learning all this is often increased by the fact that the language of instruction is not the pupil's mother tongue. In cases

1. Seen from this point of view, the introduction of modern mathematics into the primary school is hardly an improvement, for it leads to an increase in the number of signs to be memorized.

where this additional difficulty does not exist, the vocabulary used at school frequently differs nevertheless from that used in the home, so the pupil has the impression of learning a new language. That pre-school education represents a step forward cannot be denied, provided that no attempt is made to begin teaching the basic skills too early, that the way is merely paved by means of adequate sensori-motor exercises and the development of spoken language. It might well be asked whether in countries where resources do not permit the setting up of this type of education it is not essential to leave enough time for such preparation at the start of the school course.

Paragraphs 3, 6, 7, 9, 13(g), 21, 22, 24, 25 and 26 deal with changes in methods and curriculum content. There would be no point in giving here a summary of chapter 4, which is devoted to this subject. It should be emphasized, nevertheless, that within a school system everything is interdependent and that effective action is not the result of isolated factors.

One may be surprised to see that only one paragraph (8) relates to the rôle of the teacher. It is true that the 1966 recommendation on the status of teachers is mentioned in the preamble, but that recommendation did not refer to wastage or to the innovations in teacher training required to prepare teachers to help reduce the repetition of grades.

Mention might also be made of paragraphs 10, 11, 12, 14 and 15, which call for closer co-operation between the various people concerned with the school—educators, administrators, psychologists, doctors, social workers—and the parents and stress the importance of mutual information relationships. All those who are concerned with an education system are jointly responsible to the families, and to the public generally, for its efficiency.

Chapter seven

Conclusions

In the previous chapter we deliberately left on one side any analysis of the latter part of the Recommendation adopted by the Conference, because the various measures proposed in these last nine paragraphs (31-39) seemed a fitting conclusion to the present work.

STATISTICAL STUDIES

This aspect of the problem was dealt with at some length in chapter 3. What is striking is, on the one hand, the lack or inadequacy of statistics on education and, on the other hand, the diversity of methods used in the collection of the data and their shortcomings, which rule out all comparison, as also the possibility of gaining any clear idea of the magnitude of wastage.

It is therefore important *to standardize and organize the collection of data*. Unesco's Office of Statistics has a twofold rôle to play in this connexion: proposing methods of calculating drop-out and repetition rates and assisting regional centres and offices in constituting teams of specialists in the field. Immediate recourse to modern methods seems imperative. It will be objected that this may involve Member States in heavy expenditure. Actually, although accurate basic data must be collected in each country by means of well-tried methods, evaluation may well be left to specialized offices: with the techniques available the material to be forwarded to a computer centre can be reduced to a small volume. What holds for big commercial concerns can be directly applied to education.

Important though it may be to determine national wastage rates, we would nevertheless emphasize the need for local and regional data. The situation in the towns differs from that in the country. Then again, dis-

tinctions must be drawn between different areas in a town and, in the country, between privileged and underprivileged regions. To be effective, the remedies must take these differences into account: it would be impossible to find any remedy which could be applied uniformly on a nation-wide basis.

Furthermore, while several delegates considered that automatic promotion was a definitive—or almost definitive—answer to the problem, others expressed serious doubts in this connexion and asked some pertinent questions:

(a) If wastage is eliminated until after the age of compulsory attendance, what happens at the subsequent stage of education and, in in particular, how is the drop-out rate affected?

(b) How do school leavers fit into the economic life of the nation?

Whereas the second question relates to the external efficiency of the system and calls for sociological surveys, the first bears on the functioning of the school itself: does automatic promotion lead to a change of attitudes on the part of pupils and parents to the various types of education available beyond the age of compulsory attendance? In other words, does the fact of not having been upset by failure leave adolescents with the wish to obtain as complete an education as possible?

The Conference did not pay much attention to higher education. Although the Unesco General Conference decided to include higher education in the survey, it must be admitted that Member States were unwilling or unable to give satisfactory replies concerning wastage at this level and the working paper revealed the inadequacy of the quantitative data. We pointed out how complex the problem was when discussing the faults of the questionnaire.

Nothing has been done about this problem as yet and its seriousness cannot be overestimated: universities and institutions of the same level place a heavy burden on national budgets, for the unit cost may in certain faculties be as much as ten times higher than it is at the secondary level. The question of the yield on investments is rightly raised: even though a student who drops out of university after a few terms is in a totally different situation vis-à-vis society from that of the primary school leaver, the fact remains that the financial effort made by the community for the student's education has been largely fruitless. From the point of view of the State a systematic study of wastage in higher education has clearly become necessary, but it should not be forgotten that the university authorities often look askance at this type of inquiry, seeing in it an attack on their independence and a threat to their liberties and academic freedom. Failing a nation-wide survey, would it not be possible to study just

a few institutions selected by the government and thus obtain information from a sampling, which should be *significant* in the statistical sense of the term.

For each faculty it would have to be known in which years dropping out occurred and in which subjects failures were most frequent. It would be worth while examining all these data in the light of the financial situation and part-time employment of the students.

The extent to which earlier studies affect success at university might also be investigated. Unesco's Office of Statistics should prepare models, which would obviate the necessity for much trial and error and ensure comparability of the findings at the national level and even from one country to another in cases where higher education is similarly conceived and organized.

STUDIES, RESEARCH AND EXPERIMENTATION

For some years now whenever any difficulty arises in education there is a cry for research. One has the impression that it is hoped that a miracle will be produced: where the school has failed the specialized institutes are expected to discover means of putting things right. This reveals misconceptions concerning the peculiar characteristics of educational research, its position in the educational structure and the means available.

Experimental pedagogics is a relatively new science, not to be compared with the natural sciences, even if it endeavours to use the methods appropriate to any scientific research. It is essentially interdisciplinary and must constantly turn to child and adolescent psychology, sociology and the ethical and political conceptions of man in the society concerned. Take a chemist who wants to make a synthesis of a particular product. Once he has thought out a process, the chain of reactions desired and the type of apparatus he will use, he has only to perform certain specific acts—all of which can be described and measured accurately. His state of mind and his personal convictions have no influence. In the human sciences the investigator is never neutral towards his subject, any more than the latter is passive, and he may at any time alter the course of the experiment. To neutralize the effects of individual behaviour, provision is usually made for a large number of subjects and another investigator if need be. In this way 'average' results, valid for a small number of subjects, are obtained. Educational action, however, is not concerned with an average individual, a sort of typical pupil, but with a group. In the face of wastage we must ask ourselves whether the failure of the school is not largely due to the fact that it is designed for this typical pupil.

Educational research, whether it is conducted by university institutes or specialized services, is often cut off from the school. Administrators of all levels of education are misinformed or uninformed concerning research and research findings. Teachers, for their part, distrust research workers, who have little contact with the day-to-day life of the classroom. Psychology seems even more suspect to school teachers, who doubt the validity of research which treats the child as a guinea pig and places him in situations apparently having no close connexion with education. This attitude is frequently accentuated by the courses given in training colleges or educational psychology centres for secondary school teachers.

Lastly, it must be stressed that in comparison with the budgets allocated to research in general, the means available for educational research remain inadequate. It figures as a poor relation, which is a sure indication of the scepticism with which it meets in both university and government circles, even education ministries!

Wastage on so large a scale calls for a new approach: it is not so much a question of increasing the number of educational research laboratories as of setting up experimental schools where research workers in education, psychology and sociology can collaborate closely with teachers. The teachers must be associated in research: not only do they know the practical aspects of school life better, but this affords an opportunity to get them out of their routine, to stimulate them and give them responsibilities in the war on wastage. Due to their position, they are the driving force: no progress will be made if they are not convinced that curricula, methods and assessment must change, that the atmosphere in the classroom is decisive for the pupils' future. In this connexion teacher training must obviously stimulate research at the outset: for this the experimental teacher-training colleges discussed at the end of chapter 4 will first have to be set up. Here again we would emphasize the importance of multidisciplinary teamwork. Aspiring teachers must be incorporated in research groups at an early stage and learn by taking an active part in current research. We might mention one line of research to which our earlier remarks do not apply—assessment and examinations. Such research can be organized quickly and at little cost. Examination copies are conserved in the archives of many education authorities. Significant samples could be assembled and given for assessment to some ten different experts on two occasions, about six months apart. The statistical data thus obtained would irrefutably demonstrate the relativity of all assessments and of examination marks in particular. With pupils' results taken from the records of various types of school it would be possible

to test the validity of promotion or examination regulations. Statistical research of this kind would not involve much in the way of methodological problems and, pending the essential fundamental reforms, would make it possible to amend the regulations on the basis of scientifically established data.

To revert to the Recommendation: investigating causes (paragraph 33) means trying out remedies. For example, learning to read is said to be responsible for disturbances which have their repercussions right throughout the first years of school. To test this hypothesis one might try other methods and measure the effects. If positive results are obtained, a solution will have been found. With regard to this example, it might be mentioned that it is not merely a question of teaching techniques: the working out of methods presupposes a knowledge of the child's environment and vocabulary, and consequently the collaboration of psychologists. What has just been said concerning a particular stage of education applies to all the other stages. Research workers, for reasons of scientific method, hesitate to embark on experiments which involve several variables, but we must ask ourselves whether the laboratory situation can be re-created in the classroom and whether in fact it is not possible to act on one or two isolated variables. For instance, when a teacher changes from one class to another, the quality of his relationship with the pupils changes too. Even if strictly identical curricula and methods could be applied—which is problematical—the fact that they are applied to different pupils by different teachers introduces an essential change in the data. We are therefore convinced that new research methods must be invented in the classroom. This would mean taking into account the variation of several factors, which should be analysed as systematically as possible.

In paragraph 34 the matter of priorities is brought up again (see paragraph 4 of the Recommendation). The need for careful consideration in this connexion cannot be overemphasized. That these priorities involve a political and ethical conception of man is obvious and must be borne in mind by those who conduct experiments in education or they are likely to work at a remove from political and social realities. It might even be questioned whether this research does not suffer from the absence of a theoretical model and whether it is not thus restricted to isolated facts without any real effect for want of a general framework.

Paragraph 35 brings in automatic promotion again. It is essential to collect scientific information in the various measures which this involves—ability grouping in the place of grades, remedial teaching, and retraining of teachers.

INTERNATIONAL CO-OPERATION

The magnitude of the task facing education ministries is such that only genuine co-operation between Member States will make it possible to take effective steps. That the international organizations must assume much of the responsibility goes without saying. Efforts must be united at all costs to ensure a steady exchange of information and research findings and to make experts available to Member States which so request. The experts will have to be prepared for their task, however, and be capable of innovating in the light of local conditions. Only too often curricula and methods applied in the industrialized countries have been transplanted to the developing countries without any question being asked as to their effectiveness in the countries which exported them, let alone in those which imported them.

RECOURSE TO CONTINUING EDUCATION

No matter how quickly and effectively governments react in the face of the present serious problem, we must envisage the continuation of wastage for several years to come. Adolescents will continue to leave school at various stages after receiving an incomplete education, adding to the number of drop-outs. In the developing countries this means relapsing into illiteracy in many cases, so the total figures for illiterates will include these by-products of the school. In all countries affected by dropping out, young people will be pushed out into the world embittered, maladjusted and more or less deeply disturbed by their failure at school. It is not certain that youth will endure this situation much longer without taking some action. On the other hand, one is struck by the passivity and helplessness of the parents.

Is there any way out or must we simply wait until the measures proposed take effect? We are convinced that twofold action is necessary: the educational systems must be transformed and at the same time education for adolescents and adults must be set up or extended, That is exactly what the sponsors of continuing education are asking for. Such education will not become fully effective until the primary and secondary schools which form the basis of the system have evolved, but there is no reason why post-school training courses should not be introduced right now. The first people to be reached should be the adolescent school leavers who have been the victims of wastage. Then come the parents of pupils suffering from the defects of the system. It is our belief, of course, that continuing education will sooner or later reach the whole population, but since it seems impossible to generalize

it in the near future, we consider that something should be done now for those most in need of it. There are many works dealing with continuing education or, to use the latest term, recurrent education, so we shall confine ourselves here to bringing out certain aspects of relevance to our subject.

The first step will be to set up post-school education centres in small rural or urban communities, after making a study of their immediate training needs. Curricula should not be centralized but constructed locally and as flexibly as possible. (In this connexion attention should be drawn to the experiments carried out by Bertrand Schwartz in centres for miners in the Nancy region.) There would be no teacher in the traditional sense of the term, but group leaders, men or women with sufficient training to fulfil this function and willing to give up a few hours of their spare time each week. The persons responsible for, say, twenty education centres would come under a regional body entrusted with providing training and retraining for group leaders several times a term according to the need.

Provision might also be made for agricultural, industrial or public concerns to have their own organizations, not only to offer vocational training but also to consolidate and extend basic knowledge or, generally speaking, raise the cultural standard of their staff.

Then again, where an adequate television network exists, more time could be given to education. When one thinks of the number of hours devoted to programmes of dubious value, one cannot but be alarmed at the scant attention paid to the education of adolescents and adults, although television has little educational value unless viewers are encouraged and stimulated to take advantage of it, if only by means of centres such as those mentioned above.

It may be objected that the necessary resources are lacking. In many industrialized countries it is a matter of priorities. In the developing countries it is a question of international co-operation, of basic choices in the assistance provided by large organizations or States.

In the face of the world crisis in education, the question is: are we going to continue sacrificing the majority of the children of each generation? The problem is one of policy rather than of pedagogics.

Appendix 1

Recommendation No. 66 concerning the improved effectiveness of educational systems particularly through reduction of wastage at all levels of instruction

PREAMBLE

The International Conference on Education convened in Geneva by the United Nations Educational, Scientific and Cultural Organization, having assembled on the first of July nineteen hundred and seventy for its thirty-second session, adopts on the eighth of July nineteen hundred and seventy the following Recommendation:

The Conference,

Considering Article 26 of the Universal Declaration of Human Rights (1948),

Considering the Declaration of the Rights of the Child (1959),

Considering the Convention and Recommendation against Discrimination in Education adopted by the General Conference of Unesco at its eleventh session (1960),

Considering the Recommendation concerning Technical and Vocational Education adopted by the General Conference of Unesco at its twelfth session (1962),

Considering the Recommendation concerning the Status of Teachers adopted by the Special Intergovernmental Conference on the Status of Teachers (1966),

Considering the Declaration of the Principles of International Cultural Co-operation adopted by the General Conference of Unesco at its fourteenth session (1966),

Considering the recommendations of the International Conference on Educational Planning (1968),

Considering that we are entering the Second Development Decade,

Considering that 1970 has been declared International Education Year,

Considering the relevant recommendations adopted by the International Conference on Public Education at its various sessions,

Considering that education has as its aim not only the inculcation of essential knowledge but also and principally the development of all aspects of the personality of the pupil and that teaching methods should be adapted to this end,

Considering that it is necessary that every pupil should be enabled to complete the cycle of education on which he embarks and, that within the framework of life-long education, there should be aquedate provision of continuing education for the early leaver,

Considering that most countries have been seriously concerned with some form of wastage, and that statistical analysis has shown clearly the extent and distribution of the phenomenon of wastage at various levels and points of the educational systems,

Considering that drop-outs often entail unproductive expenditure and that repetitions increase the cost of education thereby prejudicing both qualitative and quantitative improvement in education, to say nothing of the ill-effects that repetition may have upon pupils,

Considering that the improvement of the effectiveness of educational systems and particularly the reduction of wastage are essential both for ensuring for all the realization of the right to education and also in order to strengthen the contribution of education to social and economic development of the society,

Submits the following Recommendation to the Ministries of Education of the different countries:

BASIC PRINCIPLES

1. The measures to be taken to reduce educational wastage should be studied in the light of the following principles:

   (a) all aspects of the social and economic context and of the educational systems are relevant to wastage;

   (b) many factors contribute to wastage at the different levels of instruction. They vary widely from one country to another, particularly with the level of development. Broadly speaking, they fall into one of the following categories:

the environment

(i) home and community: geographical, social, economic or cultural constraints (distance from school, an unhelpful environment, linguistic differences, underdevelopment, public opinion, etc.),

(ii) the school system (administration, organization, curricula, number and qualification of teachers, family-school relationship, buildings and equipment, etc.),

the personality of the child (physical, mental, intellectual and moral factors, motivation, etc.)

(c) factors associated with wastage usually occur in combination and require studies concerned with their interaction as well as with their independent effects. These studies should be based mainly on what has been learnt through experience in a particular context.

2. The reform of educational systems resulting from the evolution of civilization should encourage us to re-examine, in the light of the specific characteristics of each country, the question of curriculum reform (especially in the first years of the school course), the role of evaluation procedures and ways of organizing school and vocational guidance with a view to reducing educational wastage and also failure to enter upon a working life successfully.

PRACTICAL MEASURES TO REDUCE SCHOOL WASTAGE

3. A number of measures should be taken, some of which should be of a general nature, aimed at improving the effectiveness of educational systems. These should effect a renewal of such systems by bringing them closer to life, to economic and social needs, and to individual aspirations. Other more specific steps should deal with the various factors influencing wastage.

4. The aims of education in a rapidly changing world should be redefined, taking into account the contribution which education must make to human, social and economic development and to the effective implementation of the right to education.

5. It seems desirable to keep the concept of the life-long education in mind, since this provides a link between education and life, and ensures that people's knowledge is constantly improved and that school and out-of-school education are properly co-ordinated. It seems desirable to overhaul educational structures in order to achieve greater flexibility and a better coherence between the various components of education, while ensuring maximum continuity within systems and facilitating transfer from one type or level to another.

6. Care should also be taken, when determining the content of education, to allow for the need not only to teach facts, but also to teach how to learn; basic instruction should have its proper place; new subjects should be included where necessary as knowledge progresses; an introduction to practical life and technology should be provided; and attention should be given to the inculcation of attitudes which will be beneficial in a working life.

7. It seems desirable that there should be continual improvement of the methods used in teaching and education in general, both by using modern information media and educational technology, and by applying the results of educational and psychological research so that the methods used are better suited to the child's needs.

8. It is essential to improve the pre-service and in-service training of teachers and their guidance, paying particular attention to their preparation for the new rôle they are to play, in view of the need for a new type of relationship between teachers and the taught and for a broad preparation for life.

9. It is important that selection procedures and methods used to test knowledge and assess school results should be reviewed, and that arbitrariness and subjectivity in these matters should be eliminated as far as possible; it seems desirable to adopt a positive attitude towards pupils and to take into account the affective and temperamental aspects of each pupil's personality. To this end it seems desirable to adopt measures to evaluate the efficiency of educational institutions as a whole.

10. It is essential to develop school counselling and vocational guidance services on a permanent basis, so as to supply the children, their families and the public with adequate information about the educational system and the opportunities it provides for achieving a better life in general and for employment.

11. There should be close co-operation between educational administrators, educators, school psychologists, careers advisers, doctors, social workers and parents.

12. There should be close co-operation between the school, the family and the community.

13. In order to offset certain social, economic and geographical handicaps, the following steps should be taken *inter alia:*

    (a) the extension of free education at all levels and the extension and improvement of the school network and better distribution of schools, particular attention being paid to the needs of rural areas and minority groups;

(b) the establishment of boarding schools, especially for children from sparsely populated areas;

(c) the institution or expansion of social services or the application of a policy of assisting the family or child (canteens, free food or clothing, school transport allowances, nurseries open during parents' working housr, etc.);

(d) the expansion of school health and medical services;

(e) the expansion of pre-school education, especially in rural areas and the overcrowded areas in large towns;

(f) the granting, on a more equitable basis, of more scholarships and educational allowances of various kinds as well as of grants for higher education which will free students from the need to take paid work that hinders their studies;

(g) supervised study on a voluntary basis after school hours.

14. Systematic public information should be organized on a permanent basis to give parents an awareness of the importance of their children's attending schools.

15. Steps should be taken to make schooling compulsory, provide the facilities needed to cater for the enrolment of all children; and prevent foreseeable voluntary drop-out, particularly when this results from the working activities of minors.

16. Services should be set up or expanded to trace physically or mentally handicapped children and institutions should be founded for such children.

17. The teaching of the language of instruction should be improved, both as a subject and as a tool for the acquisition of knowledge.

18. Steps should be taken to eliminate those factors making for wastage which are connected with the use of a language other than the mother tongue as the vehicle of instruction.

19. Special attention should be given to the teaching of basic subjects in which wastage sometimes occurs — for instance, the mother tongue and mathematics.

20. Measures should be devised to reduce the rates of repetition in the first years of the primary course, in which they appear to be particularly high.

21. In reviewing the content of education, provision should be made for new subjects closely related to life, the environment and work, in order to strengthen the pupils' motivation.

22. It is also desirable to deepen the child's interest in school through various extra-curricular and out-of-school activities.

23. School psychological services should be established or improved, and the rôle of the school psychologist should be redefined and expanded.

24. In the educational structure provision should be made for complementary forms of education which will enable children who have dropped out from school or who are seriously behind in their work to acquire more general knowledge and vocational or pre-vocational training, so that they may re-enter the educational system or enter the production sector.

25. A study should be made of the possibility and desirability of introducing, at the appropriate level, trade courses or preparatory courses for working life.

26. In reviewing the content and structures of education, a study should be made of the possibility of the school giving the pupil, at an appropriate age, practical experience of the world of work as part of his training for life.

27. The material conditions in which education is given — equipment, teaching materials, laboratories and libraries — should be improved.

28. The important factor of wastage resulting from excessively large classes should be eliminated by reducing the numbers in each class so that there is an appropriate pupil/teacher ratio in countries where circumstances allow of this, although this should not be done in those countries where it would make the school attendance situation worse. In such countries, educational authorities and research workers should devise ways of improving the efficiency of such classes, thus reducing wastage.

29. The results of experience gained by teachers and schools which have succeeded in reducing wastage considerably or even in eliminating it should be disseminated and widely applied.

30. In reforming educational systems and working out special measures to reduce wastage rates, account should be taken of the part that can be played by educational research and the science of education.

STUDIES TO BE CARRIED OUT

I. Statistical studies

31. The collection of data for national purposes should be standardized and organized systematically. To this end, reference should be made to the methods used in the Unesco survey on the statistical measurement of

educational wastage (1969), in order to calculate drop-out and repetition rates and (or) to assess the effectiveness of educational systems (although such methods might be improved) and use should if necessary be made of modern data-processing techniques.

32. Further studies should be undertaken, using the case-study methods at national level and with international assistance. If possible, Unesco should take the lead in promoting these studies, in which regional educational offices and centres could take an active part. The studies should deal with the following points, the work done by the various regional organizations being taken into account:

    (a) how to achieve greater accuracy in the collection of data;

    (b) how to check the reliability of wastage indices and of the deductions to be made from them;

    (c) the elaboration of techniques for the assessment of wastage in school systems without repetitions or drop-outs;

    (d) elaboration of indicators of wastage for the purpose of simulation on the basis of alternative hypotheses;

    (e) the nature and incidence of wastage in higher education.

II. Studies, research and experimentation

33. Methodologies should be elaborated and studies in depth should be carried out to investigate the various aspects of the problem of wastage, especially the causes of backwardness, the learning process and motivation in different contexts and localities.

34. The aims and basic principles of educational systems should be redefined with a view to ensuring maximum retention of pupils at school without prejudicing educational standards.

35. Studies and research should also be carried out on the criteria to be applied to promotion and to the assessment of school results and on the procedures to be adopted for these, especially as regards automatic promotion.

INTERNATIONAL CO-OPERATION

36. International co-operation in the exchange of information, statistical data and the findings of research and experiment, as well as in the free circulation of tests that have proved effective in classroom practice, should be fostered.

37. The Regional Conferences of Ministers of Education convened by Unesco should study the problems of school wastage and their causes, together with possible remedies.

38. Unesco should draw up co-ordinated programmes for the study of wastage problems, at both national and regional levels and such programmes should be conducted in association with IBE, IIEP, the Unesco Institute for Education (Hamburg) and the Regional Offices and Centres.

39. It is desirable that Unesco should make available to Member States, at their request, assistance for the preparation of studies on the problem of wastage and for the training of specialists to study this problem. The fellowships made available to governments under external assistance programmes could be used for this purpose. Member States should also seek adequate international assistance for the collection and standardization of statistical data.

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